143

New

152033

Vol. VII

TRANSCRIPT OF RECORD

Supreme Court of the United States

OCTOBER TERM, 1936

No. 539

THE OHIO BELL TELEPHONE COMPANY,
APPELLANT,

vs.

THE PUBLIC UTILITIES COMMISSION OF OHIO

APPEAL FROM THE SUPREME COURT OF THE STATE OF OHIO

FILED NOVEMBER 20, 1936.

SUPREME COURT OF THE UNITED STATES

OCTOBER TERM, 1936

No. 539

THE OHIO BELL TELEPHONE COMPANY,
APPELLANT,

vs.

THE PUBLIC UTILITIES COMMISSION OF OHIO

APPEAL FROM THE SUPREME COURT OF THE STATE OF OHIO

VOL. VII.

INDEX.

	Original	Print
Proceedings before Public Utilities Commission of Ohio, No. 3307 and consolidated proceedings—Continued.		
Statement of oral evidence from "Chicago Case"—Continued.		
Testimony of—Continued.		
George E. Folk	6987	4456
George A. Campbell	7006	4473
John Edward Otterson	7015	4481
R. H. Gregory (recalled)	7033	4496
W. F. Sloan (recalled)	7037	4500
R. H. Gregory (recalled)	7042	4502
F. M. Williams	7053	4521
Allen G. Hoyt (recalled)	7057	4524
F. M. Williams (recalled)	7079	4535
R. H. Gregory (recalled)	7079	4535
William H. Egan	7091	4545
James C. Burton	7098	4551
Allan B. Crunden (recalled)	7099	4552
W. F. Sloan (recalled)	7117	4568
Allan B. Crunden (recalled)	7121	4570
G. W. Cummings (omitted in printing)	7125	

JUDD & DETWEILER (INC.), PRINTERS, WASHINGTON, D. C., JANUARY 18, 1937.

—8615-C

	Original	Print
Proceedings before Public Utilities Commission of Ohio, No. 3307 and consolidated proceedings—Continued.		
Statement of oral evidence from "Chicago Case"—Continued.		
Testimony of—Continued.		
John S. Hagberg	7275	4573
George B. McCann	7300	4597
R. C. Rainwater	7372	4669
W. M. Hammond	7396	4691
R. C. Rainwater (recalled)	7408	4703
Charles R. Whitworth	7476	4767
George B. McCann (recalled)	7485	4775
R. C. Rainwater (recalled)	7626	4830
W. M. Hammond (recalled)	7649	4851
Stipulation re Rainwater Exhibits	7653	4855
Testimony of Harold D. Arnold	7655	4856
Lyman F. Morehouse	7671	4871
Otto B. Blackwell	7680	4881
Dr. Frank B. Jewett	7694	4894
John G. Roberts	7716	4916
Frank W. Jewett (recalled)	7718	4917
Theodore G. Miller	7754	4953
Cajetan Morsack	7763	4962
James J. Pilliod	7767	4966
Harry H. Carter	7770	4968
Clyde Uhrig	7776	4974
Pierre W. Saxton	7784	4981
Bancroft Gherardi	7790	4987
Pierre W. Saxton (recalled)	7800	4996
Clyde Uhrig (recalled)	7815	5012
James F. Behan	7817	5014
Edgar S. Bloom	7820	5017
Arthur W. Page	7830	5027
Edgar S. Bloom (recalled)	7837	5034
Pierre W. Saxton (recalled)	7838	5035
James F. Behan (recalled)	7840	5037
Clyde Uhrig (recalled)	7842	5039
Seymour L. Andrew	7843	5040
Harry H. Carter (recalled)	7852	5049
Cajetan Morsack (recalled)	7860	5057
Robert W. Burgess (omitted in printing)	7863	
Daniel C. Collins	7863	5059
Cajetan Morsack (recalled)	7864	5059
Harry H. Carter (recalled)	7867	5063
Pierre W. Saxton (recalled)	7868	5063
Cajetan Morsack (recalled)	7868	5064
Statement of oral evidence in "Toll Rate Case" No. 124	7870	5065
Caption	7871	5065
Appearances	7871	5065
Testimony of F. L. Rhodes	7872	5065

"Mr. Goldstein: We object to the introduction of those exhibits on the same ground as the initial exhibits to which they have application, and on the additional ground that we have not yet had available the minutes of the Executive Committee meeting.

"Judge Wilkerson: I shall overrule the objection, on the assumption you have access to the minutes of the Executive Committee.

"Mr. Blackman: Oh, yes, they will have access to those.

"I will offer in evidence D-122 for identification. I thought I was going to save time by leaving that out, but I find I have not saved any time, it has just led to more cross-examination, so I will offer it in evidence now, and ask leave to supply the blank in Exhibits 198, 199, 200 and 201.

"Judge Wilkerson: It is admitted."

(Which said document marked D-122 for identification was thereupon received in evidence as Plaintiff's Exhibit A-202.)

"Mr. Bracelen: If your Honor please, I think your Honor did not rule upon our offer of Exhibits A-125 to A-129, inclusive, being exhibits identified by Mr. Turner.

"Judge Wilkerson: What is the nature of the exhibits?

"Mr. Bracelen: They were the depreciation exhibits.

"Mr. Goldstein: They were subject to our motion. We moved to have them stricken.

"Judge Wilkerson: You objected to them?

"Mr. Goldstein: We objected.

"Judge Wilkerson: And stated the grounds, and the grounds are similar to those urged against other exhibits which I have admitted. Are there any objections peculiar to these exhibits?

[fol. 6986] "Mr. Goldstein: We have read into the record our specific objections to them.

"Judge Wilkerson: What is the objection?

"Mr. Bracelen: I understood the objections were overruled, but I want a definite ruling.

"Judge Wilkerson: They may be admitted.

"Mr. Bracelen: If I may have it, that they are received in evidence.

"Judge Wilkerson: Yes. It may be understood in this

case that when an exhibit has been offered, and there is no objection to it, it has been received in evidence, even if the record does not show affirmatively the Court has received it; if it has been objected to, the objection has been overruled; it may be understood it is in the record, even though the record does not show an affirmative ruling of the Court.

"But if you call my attention to it, I will rule affirmatively, so that it will be in the record. If that question should arise hereafter, in view of the large number of exhibits, where there has been a ruling on the objection, it will be understood that the document is in evidence."

(Which said documents, so offered and received in evidence, were marked Plaintiff's Exhibits A-125 to A-129, inclusive.)

• • • • • • •

[fol. 6987] GEORGE E. FOLK, for defendants:

Direct examination.

By Mr. Haight:

I reside at New Rochelle, New York; I am patent attorney for the American Telephone and Telegraph Company and have been since 1915; I have been general patent attorney since 1918; from 1915 to 1918 I had charge of the patent division of the American Telephone and Telegraph Company at New York, the main patent department being at that time in Boston. The general patent attorney retired about 1918 and I took his place, moving the office to New York.

In handling the patents we follow the system of classification that the Patent Office has. We make no attempt to classify the patents themselves. We do not attempt to classify the applications according to any subject matter after the patents are issued. We keep our files in exact conformity with the Patent Office so that when we make a search we have the same files that the Patent Office has to make the search with.

We have means of telling from our records how many patents we have relating to some specific subject matter. With respect to radio, we could look through our files and pick out the ones that have been assigned to us which would require an examination of the patents themselves.

The American Telephone and Telegraph Company owns or controls about 8,000 U. S. patents, and about 2,000 applications pending. That includes patents of Western Electric. In my department we do not handle the patents of Western Electric. About half the 8,000 patents are owned by the American Telephone and Telegraph Company and [fol. 6988] about half by Western Electric. There are some patents that we control, but do not own such as De Forest patents, under which patents we have exclusive licenses except for certain non-exclusive rights reserved to the De Forest Company itself. The De Forest patents relate largely to the vacuum tube and its uses, circuit arrangements which are applicable to both wire and wireless telephony and telegraphy. The original De Forest patent on the vacuum tube which was basic to the tube structure, has expired. There are various circuit arrangements used in the system quite extensively, such as for the generation of high frequency oscillations, or for detectors or modulators. The principal one relates to the generation of high frequency oscillations. They are used in the radio art but not exclusively. They are used in the arts of wire telephony and telegraphy.

The Western Electric patents in the main relate to what are called by us as telephonic appliances, as distinguished from those patents which relate to the creation or modulation or improvement of the speech itself. For example, a patent on a switch or switching mechanism would be a Western Electric patent. A patent on a switchboard would be a Western Electric patent. A patent on a call bell. Those are examples of the kind of patents referred to.

Patents owned by Western Electric cover apparatus manufactured by it. There are other patents owned by the American Telephone and Telegraph Company that likewise cover apparatus manufactured by Western Electric. Other companies and Western Electric own patents under which others manufacture for us or for the associate companies rather than Western Electric itself doing the work.

Some of the patents owned by the American Telephone and Telegraph Company that are applicable to communication over wires would also be applicable to communication by wireless telephony. Some of the patents that are applicable to communication by wire telephony are also applicable to communication by wireless telephony or by wire telegraphy or by wireless telegraphy. Some of the patents

also relate to apparatus that is used in connection with [fol. 6989] wire telephony systems such, for example, as earth boring machines, such as are used for digging post holes for telephone poles.

I have no doubt some of our patents cover public address systems and undoubtedly some cover apparatus used in talking movies.

We have a list of our patents and if we have reason to believe that any of them are infringed by apparatus, when we notice them being put on the market, we quite frequently write and call attention to that particular patent.

If there were in the room a switchboard manufactured by Western Electric, our records would not show patents whose inventions are embodied in the switchboard. If any records would show it, it would be the records of the Bell Laboratories, and I do not know to what extent they keep those records. My records would not show what patents cover local exchange service and what cover inventions embodied in long lines.

I do not recall any suit that was instituted by the American Telephone and Telegraph Company or against it involving infringement on patents on transmitters, receivers and induction coils.

The records of the Boston office go back much further than 1915. I will check back on our records for twenty years and see whether there is any suit brought by or against the American Telephone and Telegraph Company involving infringement of patents on receivers, transmitters and induction coils.

Foreign patents are obtained on inventions that come to my department for handling. It is true of the American Telephone and Telegraph Company and also of Western Electric. The American Telephone and Telegraph Company, however, does not take out the foreign patents. Those inventions are offered to companies which have contract relations with the American Telephone and Telegraph Company. The offer is made through the Laboratories.

Inventions covered by foreign patents and made by em- [fol. 6990] ployees of American Telephone and Telegraph Company were made available to International Western Electric. Prior to the organization of the Laboratories that was handled through the Western Electric and since the organization of the Laboratories up until the contract

with the International that work was done by the Laboratories.

We have records of patents we have purchased.

I have heard of the term "by-products" as it is used in the Bell System.

With reference to patents owned by the American Telephone and Telegraph Company covering inventions relating to by-products, there has been litigation. Suit was brought by Western Electric and E. R. P. I. against infringers of talking motion picture apparatus and some of our patents were involved in that litigation. Among those patents involved in that litigation there were some owned by the American Telephone and Telegraph Company as distinguished from Western Electric. The suit, however, referred to was against the Pacent Electric Company. I think the suit is on appeal at present in this circuit in the Southern District of New York. I could give you the information in a little while as to the patents involved in that suit. I can only recall one now, namely, the Loewenstein patent on the negative grid.

This company has granted certain rights to the General Electric Company and radio companies associated with it and there have been suits brought by those companies under patents owned by the American Telephone and Telegraph Company. Those patents relate to broadcast receiving sets or to vacuum tubes.

We have complete records of contracts granting licenses under patents of the American Telephone and Telegraph Company. There are agreements between the American Telephone and Telegraph Company and Western Electric concerning patents, the invention of which are embodied in products sold by E. R. P. I., but I think the contracts are in [fol. 6991] the form of letters principally. I think there are no contracts directly with E. R. P. I. as distinguished from Western Electric, but there may be some with both.

I do not recall that we have ever handled any patent applications on inventions made by an employee of Bell Telephone Laboratories. We have received assignments of patents on applications filed on behalf of employees of the Laboratories.

Those inventions relating to what we call telephones have been assigned to the American Telephone and Telegraph Company, the theory being that in any event, whether they went to Western direct or to the Telephone Company direct,

they would ultimately rest in the American Telephone and Telegraph Company.

I do some work in connection with the purchase of patents by Western Electric. Since we are interested in telephonic appliances, having exclusive right to use those inventions, we are naturally consulted when patents are purchased.

The records of our department do not show whether the inventions embodying patents come from employees of the American Telephone and Telegraph Company, from the Laboratories or from subsidiaries in the Bell System, but that could be obtained by checking off the names of the inventors and finding out in what department they were employed at the time.

GEORGE E. FOLK, recalled:

Direct examination.

By Mr. Adcock:

With respect to induction coils, receivers and transmitters, there are no infringement suits pending and none have been brought against American Telephone and Telegraph Company or any of its subsidiaries or associated companies since my connections with the company.

[fol. 6992] Cross-examination.

By Mr. Blackman:

I have found, however, that there have been some litigation or controversies concerning those matters. There was litigation with Frederick R. Parker of Chicago. On May 20, 1913, a patent was issued to Craft & Reynolds, No. 1,262,082, and assigned to American Telephone and Telegraph Company. The patent related to the present standard telephone receiver having a permanent steel magnet with soft iron pole pieces. After the patent was issued and after the device had been standardized and placed in extensive use, Parker provoked an interference suit in the Patent Office with a patent of his which was then pending and attempted to get the claims of the patent for himself. The case was finally disposed of by the Court of Appeals of the District of Columbia in favor of the patentees. This matter might have been of very serious consequences by

reason of the enormous number of these things in use, being practically universal in the Bell System. In some cases there have been threats of infringement suits where we have settled without the necessity of suits being brought.

The litigation referred to was terminated in 1916 or 1917. My department has a record of the patents owned or controlled by American Telephone and Telegraph Company or Western Electric, but that list does not distinguish between those which originate in the System and those which are purchased from outsiders. We do have a separate list of those patents under which we are licensed from others.

About 1910 a very systematic and determined effort was undertaken to acquire certain rights in outstanding patents relating to automatic telephony, in order that our Research and Development Department and Engineering Departments might be free to develop whatever they determined should be desirable or necessary. As a first step in that direction the Lorimer-Lundquist patents were purchased in 1911 for the sum of $650,000. These patents related to trunk selection and group selection in automatic telephone [fol. 6993] exchange systems, which is a feature of all telephone panel type apparatus—inventions used in all multi-office automatic exchanges, especially in large cities.

Next, in the following year, and again a few years later, the patents of the North Electric Company were purchased in some cases and in other cases, licenses acquired, the price paid being $725,000. This was followed in the same year,—and also in the same year 1916 by purchases from the Stromberg-Carlson Telephone Manufacturing Company,—the price paid to that company was $250,000. The purchase was of patents in the one case and licenses in the other. I might say that whenever licenses were acquired, there was always a cross-license arrangement, in which we paid, in addition to giving licenses under our patents in certain fields and the purchase price mentioned. The Stromberg-Carlson price was $250,000.

About the year 1913 the patents of the American Automatic Company were purchased for the sum of $75,000, which related to signaling over two wire circuits. From 1916 to 1919, inclusive, at various times in each year, licenses were exchanged with the Automatic Electric Company and Automatic Electric was paid in money the sum of $2,000,000 in addition.

Licenses were exchanged with the Kellogg Switchboard & Supply Company and in addition $250,000 was paid.

When I say exchange of licenses, licenses relating to automatic telephone, I mean licenses were given and received.

In 1930 licenses were acquired by American Telephone and Telegraph Company and Western under the patents of H. N. Friendly, some relating to automatic telephony and among other things relative to straightforward trunking, and $700,000 was paid for them.

In addition to purchasing patents outright, we have acquired licenses under approximately 100 groups of patents covering almost every feature of telephony. Each group I mentioned related to the automatic switch field but not exclusively to that field. The policy of American Telephone and Telegraph Company has been to supplement the activities of its own D. & R. Department by the purchase of any [fol. 6994] patents that might be useful in such development work or that might interfere with such development work, which accounts for the extensive purchases from time to time. Before apparatus is standardized and before patent release is given, careful search is made to ascertain whether any patents which would interfere with such use, exist, and if any are found, an attempt is made to acquire such rights as would be necessary. In some cases the attempt is made in order that the development work in its initial stages may be unhampered by the necessity of having the men's attention directed to those patents.

Almost invariably when we standardize a new type of apparatus, some claim of infringement is made by somebody. Frequently the claims are without merit but sometimes we find they are meritorious and we endeavor to clear the situation by acquiring the rights, avoiding litigation and controversy. Of course we have the risks that everybody has of some application for patent being pending in the Patent Office, of which we would know nothing until the patent is issued. But in spite of all our precautions, infringement suits have been brought.

Suit was brought against this company along about 1919 or 1920 by General Owen Squire under his so-called "Wired Wireless Patents", claiming that our new development in carrier current telephony and telegraphy infringed those patents. In that litigation we were successful. There was a suit brought by Peter Cooper Hewitt when American Telephone and Telegraph Company adopted the three-element

vacuum tube as a repeater, Hewitt having patents relating to mercury vapor vacuum tubes which had claims in them reading on the three-element vacuum tube. Suit was brought and we were successful in that.

Frederick R. Parker, who was mentioned before, brought suit in 1915 against the Chicago Company for infringement of a patent relating to a signal lamp in the main circuit. We settled this matter by obtaining licenses for the Bell System under the patent before suit actually came to trial.

[fol. 6995] At present we have two pending suits of considerable consequence brought by the Kellogg Switchboard & Supply Company against American Telephone and Telegraph Company and Michigan Bell Telephone Company at Detroit and a similar suit brought against American Telephone and Telegraph Company and New York Telephone Company at Buffalo, in which there are eleven patents involved,—Kellogg Company claiming infringement by reason of straightforward trunking employed in every exchange throughout the System and especially in large cities. There are two suits against the New York Company and two against the Michigan Company.

In the other suit involved is a claim of infringement of patents by reason of the use of our No. 11 switchboard, which has various features claimed by the Kellogg Company as covered by its patents, such things as automatic disconnect. The No. 11 switchboard is in very extensive use throughout the country. The matter is one of serious consequence if the claim of the Kellogg Company should be found to be correct. We do not believe that we infringe, and we are defending those suits. Testimony is being taken on such a scale that it seems it is going to be almost of monumental size so far as the record is concerned.

Before suit was brought, the Kellogg Company offered licenses to American Telephone and Telegraph Company and the offer as finally made was that American Telephone and Telegraph Company pay $5,000,000 in cash to the Kellogg Company for the non-exclusive license and in addition, give non-exclusive licenses to the Kellogg Company under American Telephone and Telegraph Company patents, and that American Telephone and Telegraph Company should guarantee to the Kellogg Company $100,000,000 in business to be given over a period of 20 years at the rate of $5,000,000 of business each year, the business to be on a cost plus 20 per cent basis and related to telephones and switchboards.

A penalty of $1,000,000 a year was to be paid for years in which the American Telephone and Telegraph Company failed to give that amount of business.

[fol. 6996] While obviously this is an extravagant claim on the part of the Kellogg Company, it does indicate what they consider the seriousness of the situation, and the nature of the undertakings we have to make to defend our associate companies and save them harmless from the use of apparatus when used by these other companies.

The development of the field of radio was responsible for my being with the company, and I have been rather closely connected with the development of the patent situation in the radio field. That familiarity extends to the patents of the General Electric, Westinghouse and other companies.

There is no clear line of demarcation between radio and certain modern wire development. The three-element vacuum tube has frequently been referred to as the heart of radio. It can with equal truth be referred to as the heart of carrier current, wired telephony and telegraphy. As in radio, this tube is used for amplifying currents, generating frequencies, for modulating frequencies, for splitting up frequencies, for detection or demodulation.

The same is true with reference to carrier currents, wire telephony and telegraphy. Practically the same type of apparatus is used. Certainly, so far as the patents are concerned, there is no distinction whether it is a wired or wireless device.

A number of the developments in wire telephony and telegraphy have been carried over into the wireless art. Our wave filter patents which were gotten up primarily for wire work are extensively used in the wireless art, which is true of the attenuation equalizers having their use in the wireless art. Any one working in the one art is working in the other art, but to all intents and purposes neglect to either art is, to a certain extent, neglect of the other art. That would apply equally to the patents of the American Telephone and Telegraph Company, the General Electric and Westinghouse.

[fol. 6997] GEORGE E. FOLK, recalled:

Recross-examination.

By Mr. Blackman:

In my former testimony I had overlooked the fact in stating that we had license agreements with the North Company, that there was still a third agreement in 1923 by which the parties exchanged licenses with each other.

There was another suit pending against American Telephone and Telegraph Company and the Michigan Bell Telephone Company. This suit was brought by the Standard Register Company under seven of its patents and relates to the form feed attachments for teletypewriters. Those machines are used very extensively both by American Telephone and Telegraph Company and its associated companies, and this suit against the Michigan Company is in the nature of a test suit.

There is also a suit brought by the same Standard Register Company against American Telephone and Telegraph Company in New Jersey, we being joined in that suit as contributory infringer, the suit having been brought against the paper manufacturer that supplies the paper used in those machines. I think the suit is pending in New Jersey.

I have also within the last few minutes and just before coming down here, been served with a summons in another suit brought by Thomas B. Dixon against American Telephone and Telegraph Company, Western Electric and E. R. P. I. on patent No. 1,197,470 in the Southern District of New York. We were threatened with this suit but our investigation led us to the conclusion that we did not infringe. I have not examined carefully the bill of complaint, but it is substantially along the lines of the contention made by the patentee in his letters to us, he claiming that a certain patent owned by this company relating to the so-called push-pull amplifier circuit, was covered by the patent on which he has brought suit. That circuit is extensively used both in the wire and wireless art, and is another illustration of the fact that there is no real distinction between the wire and wireless art. The Dixon patent itself relates to telegraph sys-
[fol. 6998] tems and application.

We also consider the Kellogg suits as test suits.

In the exchange of licenses with North Electric, we acquired certain additional rights in Clements and McBerty

patents which are important to us as they cover certain features of the panel switch and of the so-called all-relay system of automatic and also some features of all metallic signalling in automatic telephone systems.

Redirect examination.

By Mr. Goldstein:

The suit involving teletypewriter inventions mentioned by me involved patents purchased at the time when the teletypewriter was bought and also patents that the Western Electric or American Telephone and Telegraph Company owned prior to that time. Before the purchase of the Teletype Corporation there had been an exchange of licenses with the Morkrun Company, its predecessor. Teletype machines purchased from the Teletype Corporation embodied inventions both of American Telephone and Telegraph Company and Western Electric and the Morkrun Company,—the particular form feed mechanism involved being a development of the latter company. Since the purchase of the Teletype Company in conjunction with Teletype Corporation we have developed still other forms of feed and all those forms of feed are involved in this controversy. So it is difficult to say just whose patents are involved.

When I speak of patents owned by American Telephone and Telegraph Company or by the Western Electric, I mean those patents to which American Telephone and Telegraph Company or the Western Electric have legal title, as the case may be.

When we had the license agreement with reference to the exchange of patents with the North Electric, it was directly through the Western Electric, though of course the Ameri- [fol. 6999] can Telephone and Telegraph Company was required to assent to that agreement by reason of its exclusive licenses under patents involved.

The North Electric contract involved the Western Electric Company patents owned by the Western Electric Company.

The expense in the 1915 litigation with Frederick R. Parker was not very considerable because the matter never came to the point of taking testimony. We made a motion to dismiss. The patents involved in that suit were owned by American Telephone and Telegraph Company. Those patents which were issued to Kraft & Reynolds related to a

receiver in which the permanent steel magnet had — soft iron pole piece.

I am not sure whether our records distinguish between patents owned by American Telephone and Telegraph Company and those owned by the Western Electric. I do not keep those records myself. To a very limited extent American Telephone and Telegraph Company acquires inventions from employees of the associated companies. That is almost a negligible matter. In addition certain inventions relating to telephony are developed by the employees of American Telephone and Telegraph Company. The title to those patents goes direct to American Telephone and Telegraph Company.

In certain cases patents relating to telephones are developed by employees of Western Electric. The title first goes to Western Electric and later the patents are assigned to American Telephone and Telegraph Company.

A third group of patents are those developed by the Bell Laboratories. In that case those patents are assigned directly to the American Telephone and Telegraph Company. Patents relating to telephone as defined by the 1882 agreement between American Telephone and Telegraph Company and Western Electric, are assigned directly to American Telephone and Telegraph Company.

All inventions of employees of American Telephone and Telegraph Company are in the first place assigned to American Telephone and Telegraph Company. If they relate to telephones under the 1882 contract, the title remains in [fol. 7000] American Telephone and Telegraph Company. If they relate to telephonic appliances under the 1882 agreement, they are offered to the Western Electric and purchased by it.

In the D. & R. Department there are inventions of both kinds.

Defendants' Deposition Exhibit 189, is entitled "Patents and patent applications costing $1,000 or more purchased by Western Electric Company, Inc., 1909 to 1930," received in evidence.

The statements in that exhibit are true.

Defendants' Deposition Exhibit 190, entitled "Licenses Costing $1,000 or more paid by Western Electric Co., Inc., to others than American Telephone and Telegraph Company 1909 to 1930," is correct.

I could furnish a statement showing patents and licenses purchased by American Telephone and Telegraph Company from others outside the Bell System. Also, a statement by American Telephone and Telegraph Company to the Western Electric.

Where American Telephone and Telegraph Company acquired licenses from the companies I named, such as the Automatic Electric and so on, we also gave licenses; that is, there was an exchange of licenses and in addition a certain sum of money paid by American Telephone and Telegraph Company as further compensation.

The cross license agreements between these other companies, American Telephone and Telegraph Company and the Western Electric, were all substantially the same.

I am generally familiar with the radio patents and was so familiar in 1920. I participated in the matters involved in the giving of license contracts covering the radio patents between American Telephone and Telegraph Company and the General Electric, dated on or about July 1, 1920, and also the subsequent extension of such license contract. The contract of July 1, 1920, covered exchanges of licenses. That contract is in existence as it was modified on July 1, 1925. The modification related to some misunderstanding regarding certain features of the previous contract and to [fol. 7001] clear up that misunderstanding it was redrafted. The changes were not substantial.

The contract of July 1, 1920, involved the exchange of licenses under two groups of patents—(1) those that had been developed and were then owned by American Telephone and Telegraph Company; (2) those to be developed both through the Research Department of American Telephone and Telegraph Company and the Research Department of General Electric.

I am familiar with the Federal Trade Commission investigation on the radio industry pursuant to House Resolution 548, 67th Congress, and the report made entitled "Federal Trade Commission, Radio Industry," which has been marked Defendants' Deposition Exhibit 191. On page 103 of this report appears a list of patents under the heading "American Telephone and Telegraph Company (including Western Electric Company) patents resulting from its own development work," and on page 105 appears another list entitled "Patents under which licenses exclusive, except personal rights retained by the grantor, were acquired from

DeForest Radio Telegraph & Telephone Company." On page 107 is another list entitled "Miscellaneous patents acquired from time to time from patentees," and on the same page there is another list entitled "Patents under which licenses were acquired from Atlantic Communication Company."

Those lists were probably furnished by my department or under my direction and I have every reason to believe the facts stated are correct.

On page 100 of that report appears the title "General Electric Company, list of United States patents," and on page 101 appears the title "Applications for patents," and I have every reason to believe that the facts stated under the headings mentioned are correct.

At pages 110 and 111 are similar titles relating to Westinghouse Electric Manufacturing Company, and I believe the statements made under those headings are correct.

I will check the introductory statements at chapters 1 and 2 and the exhibits appearing in the said report to see [fol. 7002] whether I agree with the statements made in the parts mentioned. The specific contracts referred to appear at pages 130 to 139, both inclusive, pp. 141, 150, 151, 197.

My recollection is that American Telephone and Telegraph Company has furnished to the General Electric a list of patents at the time of making the July 1, 1920, contract and has not furnished any since.

It is barely possible that we furnish General Electric Company with complete list of all our patents. I will check that up and if the list furnished was more extensive than the one in the Federal Trade Commission report I will furnish it.

Further redirect.

By Mr. Adcock:

I have only a general familiarity with the patents involved in the Kellogg Switchboard suits. Those patents are directed generally to straightforward trunking and No. 11 switchboard. I was generally familiar with the negotiations carried on with reference to the Kellogg patents. I know of no counter-offer that American Telephone and Telegraph Company made to the Kellogg Company. I do not recall what is claimed in the patents.

I understand straightforward trunking, in a general way, to be the passing of a call over an interoffice trunk—I haven't any detailed knowledge—and is supposed to save time in completing a call. Our system of straightforward trunking is recognized as an important feature of the telephone system. It was first used by the Bell System many years ago,—I don't recall the exact time. I should say it was far back of 1921 or 1922. I haven't looked into the feature as to when the Kellogg Company claims its inventions were made with reference to straightforward trunking. Whatever the claim may be, however, as to that, my recollection is that we were able to show use of straightforward trunking long prior to that time. We have given most careful consideration to those patents, the very patents on which suit was brought, and have reached the conclusion that we did not infringe any valid claims. It sounds [fol. 7003] as if you were trying to get some information which might be used against us in the Kellogg suit, but their claims are quite positive and very broad and to the effect that our use of straightforward trunking infringes their patents, and that we deny.

With reference to the No. 11 switchboard, there are certain features of this that the Kellogg Company claim infringe their patents. There are several of those features, such as the flashing recall and automatic disconnect and probably three or four other features embodied in that switchboard which they claim are covered by their patents.

No. 11 is a manual switchboard. It is my recollection that that patent relates to non-interfering answering. All of these are important features of that switchboard. I don't know when they first commenced to use those features, but our use of them and the relations of the patents was carefully investigated before the suit was brought. We were convinced that we had a good defense to them.

GEORGE E. FOLK, resumed:

Redirect examination.

By Mr. Goldstein:

I have reviewed those portions of the Federal Trade Commission's report entitled "Radio Industry," Defendants' Exhibit 191, to which my attention was called. I refer to pages 1 to 50, inclusive, which include the letter of

submittal, and chapters 1 and 2, as well as the exhibits in the appendix referred to in said first fifty pages. While there are some inaccuracies, those portions of the report above referred to are remarkably accurate in their statements of fact. There are a few instances of slight inaccuracies to which I wish to call attention.

On pages 13, 26 and 49 are statements to the effect that "the DeForest Company maintains a personal non-transferable right to manufacture and sell under these patents." This might well give the impression that the rights retained related to all fields of use, while such is not the case. For [fol. 7004] example, the DeForest Company retains no rights with respect to public service, wire or wireless telephony or telegraphy, and in certain instances reserves exclusive rights in a limited field.

On page 3 appears the statement that "the Radio Corporation has entered into agreements with the various companies which own or control practically all patents covering radio devices considered of importance to the art." This statement I believe is too sweeping. The same is also true with reference to a similar statement at the top of page 39 of the report.

From a statement on page 27, it might be inferred that Dr. Langmuir was responsible for the development of the high vacuum tube, though reference is made there and in other places to the fact that his application for patent was in interference with a similar application of Arnold, owned by the Western Electric Company. Our contention was that Arnold was prior to Langmuir in the development of such improved vacuum tube, and this contention was upheld by a rather recent decision of the Supreme Court of the United States. On page 27 is the statement: "There are patents covering the character of filaments used in vacuum tubes. There are two types of filament now generally used, one known as Wehnelt type and the other tungsten. American Telephone and Telegraph Company uses the Wehnelt type, to which it owns the patents." While the Wehnelt type of filament is the one used in its amplifying circuits, both wire and wireless, American Telephone and Telegraph Company's use was not confined to that particular type of filament, since it used then and now uses tungsten filament in its high power tubes, the uses of which are of importance.

On page 28 is a reference to the Armstrong patent relating to the feed-back circuit. The invention relating to the feed-back circuit for the generation of oscillations was then in controversy between the Armstrong application and a DeForest patent, the latter being controlled by this company. Since the report was written there has been considerable [fol. 7005] litigation respecting this matter, the outcome of which was favorable to DeForest.

On page 38 occurs the statement, "The Western Electric Company is practically the only concern which has the right under the patent situation and is manufacturing and selling transmitting apparatus for commercial broadcasting purposes." And again, referring to American Telephone and Telegraph Company, the statement is made, "It secured the exclusive right to manufacture and sell broadcasting transmitting apparatus. * * *" This was the Commission's conclusion as to the scope of the licenses, which conclusion was not acquiesced in by the other parties to the cross-license agreements. There was some doubt and difference of opinion between the various parties regarding this matter, and it was one of the things modified in the amended agreement of July 1, 1926, in which the several parties to the agreement were each given the right to manufacture and sell broadcasting transmitting apparatus.

On page 39, referring to the Radio Corporation of America, it is stated, "It also has acquired the patent rights by license agreements to the patents owned or controlled by * * * American Telephone and Telegraph Company * * *." Of course, this statement is too broad if taken literally, since American Telephone and Telegraph Company retained exclusive rights, even, in the fields, for example, of public service, wire and wireless telephony.

Defendants' Exhibit 191 for identification, subject to the foregoing statement, correctly states the facts therein recited, so far as I know.

Defendants' Exhibit 191 offered in evidence, to which plaintiff objected for irrelevancy, immateriality and incompetency.

Defendants' Exhibit 192, consisting of pages 2 to 59, both inclusive, bearing at the top of each even numbered page "Appendix to Appellant's Brief" and on page 59 bearing the legend "American Telephone and Telegraph Company Interprets 4½% Modification" and purporting to contain copies of various contracts between Southwestern Tele-

graph & Telephone Company, American Bell Telephone [fol. 7006] Company or American Telephone and Telegraph Company and Southwestern Telephone & Telegraph Company and Resolution of Board of Directors Southwestern Telephone & Telegraph Company relating to such contract, and copies of various letters and memoranda relating to same, offered in evidence.

Plaintiff admitted the authenticity of the various papers referred to, but objects to them as being incompetent, irrelevant and immaterial.

GEORGE A. CAMPBELL, witness for defendants.

Direct examination.

By Mr. Haight:

I reside at Montclair, New Jersey; I am telephone engineer for American Telephone and Telegraph Company and have been since 1897; I studied at Massachusetts Institute of Technology and at Goettingen, Germany, Vienna and Paris.

I first came into the Mechanical Department of American Telephone and Telegraph Company at Boston and was transferred with that when it was consolidated with the Engineering Department in Boston and came to New York when that department was moved there in 1907. About 1919 I went with the Development and Research Department of American Telephone and Telegraph Company when it was organized.

In the Mechanical Department at Boston there were investigations of new and difficult problems, but I do not think it was then called research work. There was some similar work done by Western Electric in New York and Chicago which continued to about 1907, when we came to New York, and it was then the announced plan that all those various research departments were to be consolidated, and so far as experimental work was concerned in the Laboratories at the Western Electric in New York, they were consolidated. The research activities remained with the Western Electric until the Bell Telephone Laboratories was formed January 1, 1925.

[fol. 7007] Prior to 1907 I worked upon experimental problems in connection with transmission; also mathematical problems and transmission on lines and transmission

through electric circuits; I did some work prior to 1907 upon new equipment in the telephone field, such as repeating coils, induction coils, operators' sets, loading coils and a little telegraph work also; transmission over wires, and loading coils on cables, and capacity of cables, and cross talk on cables.

I had something to do with changing the circuit for the operators' sets in the switchboards.

After 1907 at New York I had practically no experimental work. For a little while there was one man kept on experimental work, but that did not last very long. Since then my work has been mathematical.

When I have spoken of experimental work, I meant laboratory work.

Ever since 1907, they have had people doing work in the field on telephone plant and in the central office investigating the behavior of the actual plant. All that might have to do with operation, but more particularly it had to do with the actual behavior of the plant, tests on the plant, tests which had some relation to the operating but were not operation in themselves. After 1907 the department that did that work was the Engineering Department of the American Telephone and Telegraph Company.

The Western Electric at that time was doing some research and development and constantly doing more and more. The American Telephone and Telegraph Company has always done a great deal of forward-looking work. The research work done by Western Electric at that time related to telephone repeaters, loading, cable construction, switchboards and every phase of the plant was under forward-looking investigation. From 1907 to 1918 the Engineering Department, American Telephone and Telegraph Company, did work which would now be classified as research and studying the needs of the business at that time, and when the needs were worked out, a good many of the problems were solved by means of inventions by the men in [fol. 7008] the Engineering Department. Other problems were taken up with the Western Electric engineers and other assistance in experimental work was obtained.

The work of developing new apparatus or improving old apparatus during that period was done in the Western Electric Laboratories by its Engineering Department.

My present title is Research Engineer, in the Development & Research, American Telephone and Telegraph Com-

pany, and I have been such since that department was organized.

The Development & Research Department, American Telephone and Telegraph Company, has to do with the study of the conditions in the communication art, particularly problems that are presented by Bell Telephone System, to see how well those problems are met from a development point of view and what further developments are required.

I don't know of any problems of any magnitude other than those that are presented specifically by the Bell operating companies. I am not familiar with the work on problems that result in by-products, but that department would have something to do with those where they relate to the telephone art.

Since the organization of Development and Research, American Telephone and Telegraph Company, my duties have been making mathematical investigations along lines requested by my colleagues and developing mathematical solutions along similar lines. Those problems have had a little to do with the subject of radio, but not directly with television; none with talking pictures or aids to hearing. Problems coming to Development & Research, American Telephone and Telegraph Company, resulted in new apparatus such as wave filters. I cannot think of anything more brand new, but I do know that engineers in Development & Research have applied for and been granted a great many patents on improvements to apparatus, for instance, in the field of subscribers' equipment, Central Office equipment, machine switching, radio relating to interference pre- [fol. 7009] vention, and I understand that broadcasing systems have been investigated, but I am not familiar with that subject; also television, but am not familiar with that. Mr. Parker, my associate's name, occurs to me in that connection, but I don't know how far he has gone into it.

There is a distinction between telephotography and television in that telephotography is reproducing a picture at a distance, while television is seeing the movement of a person or object at a distance.

I understand my department has had to do with telephotography and secret telegraph systems during the war, but I don't know of any work on that since.

I understand my department has had to do with the development of apparatus for sending and receiving pictures

by telegraphy. The service of the distribution of time by telephone is given so that I assume that the department of Development and Research has had something to do with it. My department also has to do with investigations of arrangements for secretly transmitting and receiving handwriting and pictures, which is a part of telephotography.

I assume that my department has had to do with the development of amplifiers and testing means for use in broadcasting systems, in connection with WEAF.

WEAF was the radio station which was owned and operated by American Telephone and Telegraph Company.

I don't know whether my department had anything to do with the development and application of loud speaking apparatus, public address systems, printing telegraphs. I have always regarded it as primarily a Western Electric development.

Prior to the organization of Development & Research, American Telephone and Telegraph Company, the Engineering Department of American Telephone and Telegraph Company did the same kind of work. The Development & Research Department, American Telephone and Telegraph Company, kept posted on the development of the radio art. I do not know how much farther it went.

I have no knowledge as to whether any problems have [fol. 7010] come to my department, the Department of Development & Research, American Telephone and Telegraph Company, from the Bell Telephone Laboratories.

Mr. Colpitts is in general charge of the Development & Research Department, Amercian Telephone and Telegraph Company. Dr. Jewett, however, is the vice-president in charge of the department, Mr. Colpitts reporting to him.

I don't know what brought about the organization of the Department of Development & Research, American Telephone and Telegraph Company. So far as I know, there was not any great change in the character of the work of the Engineering Department of the American Telephone and Telegraph Company after the organization of Development & Research. The department, however, was divided, some of the men going into the Operation and Engineering Department and some into Development & Research. The line of demarcation between those two departments is that the men who were more directly concerned with engineering work in the associated companies, went into the Opera-

tion & Engineering Department. Those who had more to do with the development of new apparatus, new circuits and new equipment and the more fundamental work connected therewith, went into Development & Research Department. Prior to the organization of Development & Research Department the Engineering Department did that work and did so as far back as I know anything about the company, and by that I refer to the Mechanical Department originally.

The Development & Research Department principally investigates requirements of the associated companies and formulates those requirements and follows the development work. My work is mathematical. Of the work connected with the development of new apparatus I have only hearsay knowledge. My mathematical work at various times related to a number of circuits, subscribers' loops, central office circuits, toll lines, long distance lines and to radio. In radio I devised a selecting circuit known as a wave filter, widely used in radio, and took out patents on that which went to American Telephone and Telegraph Company. I [fol. 7011] took out patents also on antennae arrays now used in radio. I began work on antennae arrays during the war. That work continued for a couple of years during the war. Some of my patents issued in 1921 or 1922.

My work on filters employed in radio commenced probably in 1908 or 1909 and may have continued for five years. The filters may have been used in 1919 and 1920 and ever since, the Western Electric manufacturing them. It also manufactured loading coils which I had a part in designing in 1900 and later, being put in commercial use in 1901 or 1902.

Machine switching system embodied a great many inventions developed by my associates in Development & Research, American Telephone and Telegraph Company, or in the Engineering Department prior to that which was manufactured by Western Electric. I do not remember any more. Machine switching inventions were made as early as 1910—I don't know about later developments. I have not been familiar with that work since 1923. I am not at all familiar with patents taken out by Development & Research, American Telephone and Telegraph Company, since 1923. Roughly, there were 100 people in Development & Research Department when it was organized. There are about 500 now. I assume between that time and

now it has been somewhat larger, probably 600. That is an outside figure.

Development & Research Department, American Telephone and Telegraph Company, passes on work to the Bell Telephone Laboratories, Inc. The Research Engineers Division of Department Development & Research does not pass work on to the Bell Laboratories.

In Development & Research, American Telephone and Telegraph Company, there are divisions of Apparatus Development, Plant Development, Interference Development and the general departments. Radio work comes under Transmission Development Division; television comes under apparatus development, but I have had no contact with it. I know of no work on any such things as movietones.

The divisions of apparatus development and transmis- [fol. 7012] sion development pass work on to the Laboratories, but I have nothing to do with that part of the work.

As to the distinction between the work done by the Bell Laboratories, Inc., and that done by Development & Research, American Telephone and Telegraph Company, I know that the latter is in touch with the actnal plant and operation of the Bell System and that they are also in touch with the laboratories and that they do not do the laboratory experimental work which is done by the Bell Laboratories. They do not compete in such work.

The Department of Development & Research, American Telephone and Telegraph Company, has worked on new types of cable from time to time. There has been cable development ever since I came with the company and the departments I have been with have always been connected with that work. I don't remember any inventions on that subject, as I do not see the list of inventions or applications that are made except very rarely. I know that there have been improvements, whether they have been inventions or not, in the matter of twist in cable, varying the twist so that the adjacent layers do not have the same twist, and varying the lay of different layers has been proposed and adopted.

I do not know whether the Department of Development & Research has had anything to do with the development of pulp insulated cable, but it has had to do with the development of carrier systems over a period of probably 15 years, to the present time; also with cable loading coils for 30 years, and with iron dust cores in loading coils, which work

I associate with the Laboratories in my own mind. Development & Research Department, American Telephone and Telegraph Company, has certainly followed that development and I imagine they have contributed something but I cannot answer as of my own knowledge.

Development & Research Department had a great deal to do with the development of the hand set, which goes back 25 years, and that work was finally embodied in commercial apparatus for general use roughly five years ago. My own contact with that work, however, stopped ten or more years ago.

[fol. 7013] A development of that kind is passed upon by Development & Research Department, American Telephone and Telegraph Company, before it is adopted as the standard in the Bell System.

I have heard of the difficulties which the hand set presented which seemed almost insuperable, but I never went into details and I have not had any connection with it myself since 1910 or 1915. I was in on conferences but made no studies of my own.

It is safe to say that department had something to do with new toll switchboards, but I don't know of my own knowledge.

Transmitters, receivers and induction coils have been the subject of study by the departments with which I have been connected ever since I came with the company. I know it has been going on. The same is true of manual central office equipment. When I first came with the company the common battery was being given its first tryout. That was one of the prominent subjects of conversation and has remained so ever since. I don't know the details of that work, nor the responsibility of Development & Research Department for any improvements.

Before 1907 development of machine switching was under way experimentally in the department. That experimental work of the department as a laboratory problem I suppose ceased when it came to New York but I know that the Development & Research Department has been in as a critic and initiator of the work since.

L. F. Morehouse is the head of the Division of Apparatus Development Division. F. L. Rhodes is the head of Plant Development Division. H. S. Warren is the head of Interference Development Division. O. B. Blackwell is head of Transmission Development Division, and H. S.

Shepard is head of General Services of the Department. Mr. Carty at the time I was familiar with making of apparatus standard in the Department of Development & Research, finally passed upon the making of such equipment standard.

[fol. 7014] GEORGE A. CAMPBELL, recalled.

Cross-examination.

By Mr. Blackman:

The Development & Research work of the American Telephone and Telegraph Company is highly specialized. The ultimate groups cover small fields out of the total. The total number of people in my unit including myself is five. I do not originate any investigation as to changes in apparatus or systems. My work consists of mathematical analyses and has for 20 years. The character of my work in the last 20 years has not changed except that it has become more specialized and more mathematical all the time. Usually I have no contact with matters considered in the Development & Research Department and that has been true for 20 years. I was more familiar 10 or 15 years ago with the work that went on in the Engineering Department and Mechanical Department that preceded the Development & Research Department, because the departments were much smaller then. When I came into the Mechanical Department the men were all on one floor and just 30 or 40 men and we naturally used to see more of each other. There was then less specializing and no organization in the present sense. Soon after I came I began doing a large part of all the mathematical work.

Each organization now has its own mathematicians. They are not always classified as mathematicians but a great deal of mathematical work is done in the several divisions.

Special work is referred to me. Patents were issued to me between 1903 and 1928. The more important inventions embodied in patents were made over ten years ago. In prior years, I had, in some cases, direct responsibility for meeting commercial problems and was more closely in contact with the work of others on such problems, and for that reason my patents were more numerous then.

About 22 years ago I was one of the persons delegated to

look into the Fessenden Wireless System. An important [fol. 7015] part of that system was the selective circuit which he was using for selecting the particular station which he wished to receive and differentiate it while excluding stations on nearby frequencies. That was an important part of the system. I decided from a mathematical standpoint that it could not accomplish all he claimed for it. That being a very important part of the whole wireless project, I continued the investigation for a considerable period of time, which investigation eventuated in the invention of the electric wave filter which led to a patent issued to me. The Professor Fessenden referred to was claiming then that radio would entirely supersede wire transmission in telephony.

Redirect examination.

By Mr. Haight:

It has not done so.

The Department of Development & Research has an organization chart which shows the grouping of the men and that is the easiest source of information to determine that the work is highly specialized, but that is not the only source as I have contact with a considerable number of men and know personally the fields in which they are working and my mathematical work takes me to each of the divisions of the department to a limited extent and in all of those divisions there are mathematical problems arising. In that way I have to do with each of those divisions.

JOHN EDWARD OTTERSON, for defendants.

Direct examination.

By Mr. Haight:

Reside New Haven, Conn.; am president of E. R. P. I.; have been for about four years; Mr. Bloom was the first president for about a year when it was organized in January, 1927. At the same time he was president of Western Electric. I was E. R. P. I.'s general manager before I became president. I was general commercial manager of [fol. 7016] Western Electric for about 3 years. I was in the selling department and had a number of different titles during the 3 years I was with the Western Electric Company.

Prior to coming with Western Electric I was president of Winchester Repeating Arms Company for about 9 years and was president of it about 5 years. Before that I was an officer of the United States Navy which takes me back to my training at Annapolis.

I was familiar with the organization of E. R. P. I. Its assets came from Western Electric, the latter company taking all the stock of E. R. P. I. Western Electric owns all its stock now.

The business of E. R. P. I. is the exploitation of that portion of Western Electric's business that lies outside of the telephone field, that is, outside of the business done with the associated companies, the Graybar Company, Northern Electric Company and International Standard Electric Company.

E. R. P. I. does not itself manufacture anything, its activities being confined to selling and licensing. It sells apparatus for the recording and reproduction of sound, commonly known as talking picture recording apparatus, talking picture reproducing apparatus; also sells talking picture testing apparatus; it sells also reproducing apparatus not in synchronization with pictures, so called non-synchronous reproducing apparatus. It sells hearing aids, sells submarine cable terminal apparatus, public address systems, measuring instruments in connection with acoustic testing and acoustic measuring instruments. It has to do with phonograph recording apparatus in the sound recording.

E. R. P. I. licenses others to make electric phonographs for theatres. We use the term non-synchronous reproducing equipment to designate what is equivalent to a large electric phonograph that we use in the theatres. It has to do also with electrical reproducing equipment for broadcasting stations; with amplifiers for submarine cables, [fol. 7017] which would come under the classification of terminal apparatus for submarine cables; testing apparatus for submarine cables also comes in the classification of terminal apparatus for such cable.

We have done practically nothing with picture transmission apparatus although we have the right to deal in it.

Contract between Western Electric and E. R. P. I. of December 30, 1926, identified as Defendants' Deposition Exhibit 4, which was offered in evidence, and to which

plaintiff objected on ground of irrelevancy and immateriality.

We lease phonograph recording apparatus to our licensees. Respecting talking motion picture equipment of the various kinds, we lease the recording equipment and the testing equipment to our licensees and the reproducing apparatus we lease to exhibitors who are not our licensees except as their leasing of equipment conveys license to them. Public address apparatus for theatres is leased. The electric phonograph for theatres called non-synchronous reproducing equipment, is leased to theatres. In some instances we may have sold these. The general practice is to lease them.

We lease also electrical phonographs for broadcasting stations; also amplifiers for submarine telegraph cables which is classified with terminal apparatus for submarine cables. Those are leased to the cable companies. We also lease testing apparatus for submarine cables.

Picture transmission apparatus—we have not done any business on that, but we have certain rights with respect to that.

Hearing aids are sold. We grant licenses on sound recording both in the phonograph and the talking picture fields. We license submarine cable manufacturers in connection with the manufacture of submarine telegraph and telephone cables. We have sold them some manufacturing equipment in connection with those licenses, but that was not a regular branch of our business; that was merely in the initial stages to get them started as licensees.

With respect to phonograph recording apparatus, we have [fol. 7018] leases with two phonograph companies and those leases are approximately in the same form for the two companies, the Victor Phonograph Company and Columbia Phonograph Company, and then we have their affiliates, the Gramaphone Company, generally called H. M. V., His Master's Voice, in England, and the Columbia Graphaphone Company, which is the English affiliate of the Columbia Phonograph Company in this country. Those companies are authorized to operate in other countries throughout the world. These two companies cover substantially the whole phonograph industry. There are smaller companies, but we do not license them. We lease to those companies the apparatus with which the recording is done, that is, with which the master record is made.

The record is made on wax and the manufacturing process of transferring it from the wax to the commercial record which is sold, is not our apparatus. We are only concerned with the master record.

The foreign companies mentioned are granted licenses directly by us. The territorial extent of those licenses granted to the English Company or Companies is the world, outside of the United States and Canada, and I think, in one instance, the Far East. The American Companies are licensed for the territory in which they operate and the English Companies in the territory in which they operate. The Canadian business is handled by us through an arrangement with the Northern Electric Company, the latter being our associate in Canada, but we have to share royalties with them in connection with those phonograph records as relate to Canada.

E. R. P. I. has about twenty foreign subsidiaries. They do not grant licenses as the licenses are granted by the parent company. The foreign subsidiaries that administer these licenses supervise the operation under them and render the technical service called for in connection with them. They sell or lease or distribute apparatus in the foreign countries in the same manner that their parent company does in this country.

[fol. 7019] The rights granted relate only to the making of the master records.

With respect to talking motion picture equipment the licensees for recording and testing and reproducing apparatus generally are the same. Generally speaking, those who are licensed to do recording use testing apparatus. These licensees are principally motion picture companies or producers such as Paramount-Publix Company, Metro-Goldwyn-Mayer, Warner Bros., Fox Film Company, Metropolitan Sound Studios, Universal Pictures Corporation, Audio Cinema, Harold Lloyd, United Artists, Balsey & Phillips.

There is one company that is licensed to do recording that is not in the picture field, that is the Sound Studios; they do recording for broadcasting purposes.

The portion of the motion picture field covered by these licensees in this country is about 90 per cent. (This question was answered over Mr. Thompson's objection on the ground of immateriality.) There is generally a standard

form of contract with the licensees. I can produce one of those standard forms but I haven't it here.

We lease apparatus which records the sound in the motion picture business. Reproducing apparatus in connection with talking motion picture equipment which I stated was leased to exhibitors, is leased for the most part to owners of theatres. That apparatus reproduces the sound in connection with talking pictures. There is service called for by the leases, the leases running for ten years, service running for the period of the lease, the service being generally periodic inspection and testing and overhauling of the equipment, which is performed by engineers employed by us under the so-called service department. There is no service of that character performed by Bell Telephone Laboratories or by Western Electric or by any other entity.

Public address apparatus is leased to theatres and they are permanent installations. Generally they are leased with the talking picture apparatus and fall under the same service agreement.

Talking motion picture equipment is practically all sold on [fol. 7020] time. In the case of the recording apparatus, the time varies; sometimes cash, sometimes over a period of three years. Payments on reproducing apparatus extend over three years, generally. There are a few cash contracts. The service maintenance continues for the life of the lease. This equipment is bought from Western Electric. Approximately, our selling price is twice what we pay Western Electric. (This question was answered over Mr. Thompson's objection on the ground that it was far afield.) When the payments are over a period of three years, the amount is slightly higher, enough to cover the financial carrying charges of the deferred payment and the credit risk. In the first three years the payments called for in the leasing contract cover both payments on account of the apparatus and payments on account of the service; and after the three-year period the payments are only on account of service, and the payments on account of service continue during the balance of the seven years. These payments represent the cost with a profit.

Where recording apparatus is leased to licensees, the arrangement is not quite the same, as we lease the apparatus to the licensees and then we maintain an engineering staff in the vicinity of the studios in which the apparatus is used for the inspection and overhauling of that apparatus

and to give technical assistance to the producers as called for in our agreement, and that technical service is partly paid for under the agreement and partly borne by us as a charge against the royalties that we receive.

Contracts relating to recording apparatus require payments sometimes in cash and sometimes running over the period of three years. In some instances we have to extend the time where the companies are in financial difficulties. Originally the terms of the leases were seventeen years.

The same thing is true approximately in regard to costs as obtains in regard to reproducing apparatus. Public address apparatus for theatres and reproducing apparatus are furnished at the same time and are embodied in the same [fol. 7021] contract. Sometimes they are furnished, however, at different times, and then supplementary contracts are made. Substantially the same arrangements for payments and service arrangements are made, except that where the public address equipment is furnished separately and subsequently, it is more likely to be paid for in cash as it is a relatively small item.

Electric phonographs are leased also and fall generally under the same contracts as the talking picture apparatus and the same general facts obtain.

Electric phonographs for broadcast stations are leased on the basis of a certain fixed sum a month, varying on the degree of use and for what, the lease being generally ten years. The idea was a flat payment as a continuing rental for the period of the lease, the rental including the use of the material and service. Payments are distributed over the entire term of the lease. I cannot say just how soon we get our investment out of the actual apparatus, but I should say during the first half of the lease. (This was over Mr. Thompson's objection on the ground of irrelevancy.)

I think amplifiers for submarine telegraph cables is at the rate of a fixed sum per terminal per year. The lease runs for the period the apparatus is actually used. The same is true for terminal apparatus for press telegraphy on submarine cables. There is really no distinction in the apparatus and for testing apparatus on submarine cables.

The right to exploit picture transmission apparatus is contained in the contract, Exhibit 4.

We sell hearing aids only in a limited field as the general sale is carried on by Graybar which has an arrangement with Western Electric. My recollection is that our sales

are confined to theatres or places of public entertainment where we have our other equipment installed. We buy substantially all of our articles from Western Electric, including those sold and those leased.

When the company was organized, personnel was recruited generally from the Bell System, mostly from the [fol. 7022] Western Electric, some from the Laboratories and subsequently from the associated operating companies when we were establishing our field service organization.

Western Electric does not do any work for our company outside of that of buying or making things. It keeps the records that a parent company would keep of its subsidiary but none of the operating records of the company. We have an organization of something around 2,000. We have a treasurer with his department, an auditing department, engineering, installation and maintenance, comptroller departments, and educational talking picture department, including legal and patent department and secretarial department.

Western Electric does no accounting, treasury, secretary or publicity work for us. However, the secretary and the head of the publicity department are the same for E. R. P. I. and Western Electric, but we maintain a separate department and pay for our own services.

Western Electric has nothing to do with employees' benefit fund except that we run it in the same manner. We have employees that work for both companies in the legal, secretarial and publicity departments, the charges and expenses of them being divided according to the costs of the service. Records are kept of the time men are employed in the work of the two companies and divided in that manner. Western Electric does the paying and bills us.

E. R. P. I. has offices uptown in the Fisk building on 57th street and the term "Broadway Service" refers to the services we get down town, such as legal, secretary and publicity.

None of our departments are under the supervision of Western Electric. However, two departments are located at 195 Broadway down town. One has to do with submarine cable work and the other has to do with shop processes.

Our company gets a royalty under patent license contracts as we license manufacturers to make use of manu-

facturing apparatus, machines or processes developed in the factories of Western Electric. No extra payments are [fol. 7023] made by us to Western Electric as it is included in the other payments that we make. I think there is no contract with American Telephone and Telegraph Company itself.

The twenty subsidiaries of E. R. P. I. mentioned have no rights directly from Western Electric. They get their rights from Electric Research. We do not enter into formal contracts with them. We supervise their operations and direct their operations in an executive sense and they engage in such activities as the parent company direct them to carry on from time to time, their activities being the same.

E. R. P. I. has to some extent taken out patents on inventions developed by it but not in all instances. The patent departments of the Laboratories and of Western Electric also handle our patent matters. We have all to do, however, with the taking out of foreign patents on the inventions developed by the Laboratories or in the System, that being handled through either the Western Electric Patent Department, that part which is assigned to our business, or through our Patent Department which we maintain in London. The rights under foreign patents in our field covering foreign countries are handled by our company through these various subsidiaries.

JOHN EDWARD OTTERSON, for defendants:

Cross-examination.

By Mr. Thompson:

In my direct examination I stated that the sales price of the products of E. R. P. I. is about double the price which it pays to the Western Electric for goods purchased from that company. The difference constitutes a profit plus the expenses of doing business.

In addition to selling, E. R. P. I. has many other activities; for instance, in connection with the purchase and sale of equipment, apparatus, etc., it buys the equipment from Western Electric and others and assembles and installs it in places to which it is sold. It purchases about 10 per cent of its total sales from other suppliers than Western, carries [fol. 7024] on in Bell Laboratory development research in connection with its fields of activity and makes payment to

Bell Laboratory on account of those services, and during the years 1927 to 1931, both inclusive, it paid to Bell Laboratory for such services about 4½ million dollars.

E. R. P. I. maintains also business organizations of its own, including executive, administrative and financial, sales, engineering and accounting, and an organization for the servicing of the installations which it makes in theatres and other places after the installations are made. This is an inspection and maintenance service. It carries on promotion activities in other fields which it is endeavoring to exploit, such as industrial, educational and religious. It does legal and patent work, maintains warehouses, carrying merchandise therein. It exercises supervision over export business in foreign countries in connection with all of which it has expenses.

It offers a financial service to purchasers of its equipment who buy this equipment on a time payment basis; maintains an organization in connection with music rights, obtaining music rights from publishers and extends them under license arrangements to licensees of E. R. P. I. It maintains an organization for soliciting licensees and for negotiating with them.

In connection with these activities, E. R. P. I. pays directly all the expenses except in connection with the legal patent services, secretarial department, publicity department, and the research work done by Bell Laboratory. In the case of legal, secretarial and publicity work, the expenses are paid by Western Electric and billed to E. R. P. I. on a time basis and E. R. P. I. reimburses Western on account of such expenses.

In the case of laboratory expenses, the Bell Laboratory bills E. R. P. I. and is reimbursed by it. The bills, however, actually go to the Western and then are rebilled to E. R. P. I., but the arrangement in connection with those bills is made directly between the laboratories and E. R. P. I. All [fol. 7025] these expenses enter into and are part of the cost of the business of E. R. P. I., and are taken into account in connection with such business.

Referring particularly to motion picture recording and reproducing apparatus sold on a time payment basis, the entire sales price of the apparatus is taken up on the books at the time of sale and distribution and the deferred payments are carried on the books as receivables. The amount of payments that is deferred is that related to service

charges which are rendered later, which services are to be performed by E. R. P. I. later in servicing the apparatus. The non-synchronous broadcasting equipment sold up to date has been about one-half of 1 per cent of the business done by E. R. P. I.

Referring to my statement in direct examination to the effect that after half of the payments of this broadcasting apparatus had been made and E. R. P. I. had recouped its investment, the remaining payments do not constitute profit but they are payments on account of the financial expenses and services that E. R. P. I. has in connection with the apparatus.

Redirect examination.

By Mr. Goldstein:

I think I stated at the former hearing that there were four classes of transactions—namely: (1) Outright sale of equipment; (2) Sales of equipment on the installment plan; (3) Licensing or renting of equipment where title to the equipment is retained by E. R. P. I.; (4) Royalties for use of processes. That covers it in a general way, but is not a complete statement.

With reference to sales of equipment on the installment plan, the purchase price of the equipment is entered on the books as in the year in which the sale is made; that is, the entire sale price of the equipment on the installment plan is considered as income in the year in which it is sold, and the entire expense, including the cost of equipment, is deducted in the first year against that income.

[fol. 7026] Concerning equipment, where the title is retained by E. R. P. I. and a license given for the use of the equipment over a period of years, the entire amount of license payments called for by the contractor is entered as income in the first year except where the payments relate to service and not to apparatus—where the services are to be performed later.

If we sold equipment to a theatre, generally on a 10-year lease, the payments on account of the apparatus itself would be spread over a three-year period. The service payments run over the 10-year period. The entire payments which are due over the three-year period on account of the apparatus are shown upon the books as income in the year of sale and the expenses in connection with the cost of that apparatus

are shown also on the books at the same time. The profit will be indicated during that year as the difference between those two. The amount of payment which has not been made at that time is carried as receivables. The service charges are taken up as they are received during the year in which the service is rendered.

The title to the equipment remains with E. R. P. I. during the entire period of the lease, 10 years.

The amounts called rental are distributed for the first three years to include the service charge plus what is considered to be the selling price of the equipment. The selling price is the regular price plus such additional charge as may be necessary to cover expenses with respect to these additional payments—a financial charge.

The difference between the second and the third class is, the second class was a sale on the installment plan, the third class, the lease or rental of equipment with deferred payments. In the case of sale. The rental for the three years covers the total amount which is considered as the selling price of the equipment in the case of a sale.

In the third class, the entire cost of the equipment, together with all expenses of installation and all expenses of the transaction, together with service charges, are all taken in the first year.

[fol. 7027] Royalties are determined currently by the volume of business which the licensee does in some form, with minimum guarantees. The guarantee is during the life of the contract. The income from the royalties is entered on a cash basis as received and the costs are entered as incurred. There is no income in connection with any of these transactions which is received in any year against which expenses are to be incurred in any future years for which there is to be no further compensation.

There have been many cases where contracts have been canceled or where we have had to take back equipment. The equipment is taken back under such circumstances into our inventory at a depreciated value, taking account of wear and tear and of cost of reconditioning it and of the lower price at which it would have to be resold because of its being used equipment and the receivables which are at that time on the books as unpaid in connection with the original transaction are then taken off the books and the revaluation of

this equipment is credited against this deduction from receivables.

The federal income tax is computed on the basis of the accounting system which I have described.

I stated that 4½ million dollars was paid by E. R. P. I. to the Bell Telephone Laboratories covering the years 1927 to 1931, both inclusive.

As to whether any part of those payments covers services for which E. R. P. I. bills its customers, in a very minor degree that might be true. For example, if one of our licensees wanted the services of a special engineer out in Hollywood then we would bill the licensee for the services of that engineer and his expenses in going there.

Generally speaking, the expenses that we incur in the Bell Laboratories are deducted from the income that we receive without special billing. In the case of special representatives coming from the laboratories, the instructions to the laboratories are given by E. R. P. I.

I think the billing for that sort of service is to the Western Electric by E. R. P. I. The provisions of our agreement [fol. 7028] permit us to add 25 per cent to the direct expenses of such representatives.

When we sell on the deferred payment basis or on an installment basis, we carry the investment until such time as the payment is actually made and we make a financial charge for the interest and credit risk during that period. We follow the practice of credit companies and industrial companies generally in that line, having made a study of the General Motors plan at the time we installed our own, and we are governed somewhat by its practice.

There is a contract between E. R. P. I. and the Western Electric but how specifically the basis on which Western Electric bills E. R. P. I. for legal, patent, secretarial and research work services is set forth, I don't know. But it is a definitely established arrangement and practice between the two companies.

The contract I produced on my direct testimony is the only one I know about. The basis of the billing by Western Electric is on a time basis. However, patent services are on a case basis for each piece of work. Secretarial service is on a time basis; research on a case basis; services are done by Western Electric on a cost basis, there being no profit added.

Where E. R. P. I. requires the laboratories to furnish spe-

cial engineers and the billing is done by the Bell Laboratories to the Western and re-billed by the Western Electric to E. R. P. I., Western does not add any profit to the charge made by the laboratories. The laboratories charges the Western Electric for the services of an engineer on the same basis as it makes all other charges, that is without any profit to the laboratories. E. R. P. I.'s books have been audited by Arthur Young & Company and E. R. P. I. has copies of the audit, the audits having been made for each of the years 1927 to 1931, inclusive. Arthur Young & Company's auditors are currently and constantly in touch with our accounting department.

Mr. Goldstein: Mr. Otterson, to avoid asking you to produce detailed statements covering those various transactions [fol. 7029] both as to income and expenses we would like to have you produce the audits of Arthur Young & Company covering the years 1927 to 1930 inclusive.

Defendants' request that plaintiff produce copies of the audits of Arthur Young & Company of E. R. P. I. covering years 1927 to 1930, both inclusive, taken under advisement by plaintiff.

Mr. Thompson: I have here certain contracts and assignments which we have been requested to produce:

First, an assignment dated October 13, 1927, from International Telephone Sales and Enginering Corporation to Automatic Electric Company.

Second, an assignment dated September 30, 1925, from International Western Electric Company, Inc., to Western Electric Company, and a consent by Western Electric Company dated September 30, 1925, to this assignment.

Third, a consent by Northern Electric Company, Ltd., dated October 8, 1925, to the assignment last mentioned.

These assignments show on their face what contracts they relate to.

Also the following contracts between Western Electric Company and Victor Talking Machine Company:

An agreement dated June 26, 1925, assigned to E. R. P. I. by Western Electric on January 3, 1927.

Second, an agreement between Western and Victor Talking Machine Co. dated March 18, 1925, and assigned by Western to E. R. P. I. on January 3, 1927.

Third, an agreement between International Western Electric Co., Inc., and Victor Talking Machine Co., dated

May 1, 1925, and assigned to E. R. P. I. by Western Electric Co. on January 3, 1927.

Fourth, a modification of agreements of March 18, 1925, and May 1, 1925, dated July 19, 1926, between Western Electric and Victor Talking Machine Co. and assigned by Western Electric to E. R. P. I. on January 3, 1927.

[fol. 7030] Five, memorandum of agreement between Victor Phonograph Co. and E. R. P. I. dated January 11, 1928.

The following agreements between Western Electric and Columbia Phonograph Company:

1. One dated February 26, 1925, agreement between Western Electric Company, Inc., and Columbia Phonograph Company, Inc., assigned by the Western Electric Company to E. R. P. I. on January 3, 1927. Agreement dated April 22, 1925, between International Western Electric Co., Inc., and Columbia Graphophone Company, Ltd., assigned by Western Electric Company to E. R. P. I. on January 3, 1927.

Agreement dated January 19, 1926, between Western Electric and the Gramophone Company, Ltd., assigned to E. R. P. I. January 3, 1927.

Agreement between International Western Electric and Gramophone Co., Ltd., dated May 1, 1925, assigned by Western Electric to E. R. P. I. on January 3, 1927.

Agreement between E. R. P. I. and the Gramophone Company, Ltd., dated August 10, 1927.

I also produce an assignment by Western Electric to E. R. P. I. of one of the agreements with the Victor Talking Machine Company. I am informed that the assignments to which I have referred with respect to the other contracts are substantially in the same form. It is my further understanding that the contracts which have just been produced in which Victor Talking Machine Company and Columbia Phonograph Company are parties are the main contracts now in existence. I am unable to state that they include all minor modifications or changes.

In response to requests 9 and 11, made during the progress of this hearing, I now produce two folders which contain certain correspondence, memoranda and contracts between Kellogg Switchboard & Supply Company and Western Electric and between Western Electric and Stromberg Carlson Telephone Manufacturing Company. I want to identify these various papers for the record.

[fol. 7031] The Kellogg file consists of a letter dated September 18, 1922.

Another dated November 11, 1922.

Another dated November 15, 1922.

Another dated December 4, 1922.

A memorandum from Western Electric files dated April 14, 1923, and letters dated May 8 and 16, 1923.

The Stromberg Carlson file includes the following:

An agreement between Western Electric and Stromberg Carlson Telephone Mfg. Co. dated February 16, 1922.

Letters dated as follows: January 4, 1923; December 21, 1923; March 20, 1928.

Minutes of a conference dated April 3, 1928.

Letter dated April 10, 1928, with certain price lists attached and a letter dated October 20, 1928; another November 5, 1928; December 6, 1928; February 20, 1929.

Also an agreement between Stromberg Carlson Telephone Mfg. Co. and Western Electric dated June 1, 1920.

I understand that the requests made were with respect to the basis of prices and that no request has ben made that we produce all of the bills or other information which do not relate to the price bases.

Mr. Goldstein: Except, Mr. Thompson, that that request is in and Mr. Wray has put that up with Mr. Cox.

Mr. Thompson: I understand, but the request made orally here was of the character indicated.

Mr. Goldstein: That is right.

[fol. 7032] JOHN E. OTTERSON, recalled:

Further Direct Examination.

By Mr. Goldstein:

As to the audit which I spoke of as having been made by Arthur Young & Company each year, I now find out that Arthur Young & Company makes no comprehensive report. It is merely a certificate to the effect that they found the accounts correct, confirming the balance sheet, statement of assets and liabilities as it appears on the company's books. That certificate is in the possession of E. R. P. I. and I will produce a form of that certificate.

Referring to monthly report No. 1 entitled "Condensed Summary of Results for Years 1927 to 1930, inclusive, of

ERPI," I am generally familiar with the figures contained on that statement, but I have no way of identifying it. I think it is a statement prepared in our office and is a statement of our accounts. Said statement was offered and received in evidence as Defendants' Exhibit 187, subject to plaintiff's objection as to irrelevancy and immateriality, but no other objection subject to check.

Referring to Defendants' Exhibit 187, line 2, "Investments, December 31, 1930, $10,170,000; December 31, 1929, $19,675,000; December 31, 1928, $10,597,000; December 31, 1927, $12,761,000," we have in the records of E. R. P. I. statements, or data, showing the detail of those investments, that is, which of the portions making up this total represent investments of subsidiary companies and what represents investments outside of subsidiary companies. (The witness was requested to furnish a statement showing the breakdown of the item on line 2, showing the cases of investment contained in each of those totals, and he stated that he did furnish that.) I do not think that I can state offhand what the term "Deferred receivables" found in the column "December 31, 1929," is supposed to include. I would have to check that up. I will do so. We have a comptroller in E. R. P. I.

* * * * * * *

[fol. 7033] R. H. Gregory, a witness on behalf of the plaintiff, having been previously duly sworn, resumed the stand, and testified further as follows:

Recross examination.

By Mr. Goldstein:

June 7, 1932.

I testified that when the Electrical Research Products was organized, the Western Electric transferred to the Products an option which Western Electric Company had acquired to purchase the capital stock of the International Telephone Sales and Engineering Corporation. That assignment (or transfer) was covered in the general clause in the contract, and the assignment was actually made a few days later, I think in the early part of January.

(Document purporting to be assignment from Western to Electric Research Products acknowledged January 3, 1927, marked for identification Defendants' Exhibit D-135.)

I had reference, in the first place, to a resolution of the Board of Directors, which authorized the contract, Defendants' Exhibit 4 in Depositions. I presume that same clause is in here, although I have not examined it for that particular purpose.

The clause I refer to is Clause Number 14, which states that:

"All right, title and interest which the Western Company has the right so to transfer in and to all contracts, goodwill, patents, trade-marks and trade names of the Western, in so far as, but only to the extent that the same respectively pertain to the business of property agreed to be transferred pursuant to the provisions of an agreement between the Western Electric Company and the Products Company, dated December 30, 1926, and subject to all of the reservations, terms, conditions and limitations in such agreement contained."

[fol. 7034] The agreement to which that clause refers is Defendants' Deposition Exhibit 4. That is the clause that I rely on.

Defendants' Exhibit D-136, entitled "Net profits on sales of new A. T. & T. instruments, 1916 to 1927 inclusive" brings down the net profits to sales to include the year 1927.

A portion of the penciled memorandum furnished defendants which reads: "Average investment in A. T. & T. instruments business 1927, $6,093,000." That figure means that the average amount of investment applicable to new American Telephone and Telegraph Company instruments for the year 1927, including plant, merchandise, receivables, or less payables applicable, cash, amounted to $6,093,000.

Investment in plant, was figured on the cost of plant, the book cost of plant, the proper proportion of the book cost of plant applicable to instruments.

We made for this particular year at the request of Mr. Goldstein, an apportionment of the total operating plant of the Western Electric between telephone instruments on the one hand, and all other Western Electric manufactures on the basis of ratio of cost of sales of one to the other. We made no study, either of profits or of plant investment, or total investment, for the year 1927, as we were not particularly interested in those results, as it would affect our

profits to no extent whatsoever, whatever the results were. We had to do this five years after the event; in order to give defendants a figure for the investment during that period; what we did was to give defendants the figure which represented the average condition during the previous years, ending 1926, and it is broken down on the basis of the average conditions, that is the best that we could do at this time, in order to satisfy defendants' request.

"Q. Mr. Gregory, did you make each year, or about the end of each year, a study, from 1916 to 1926, inclusive, showing your net profits and return on investment of telephone instruments in the regular course of business?

"A. In the regular course of business each year, we [fol. 7035] made the study of the net profits on sales, but not the net profits on investments."

We discontinued that practice for the year 1927 because from 1927 on the instruments were sold generally to all Bell customers, and not solely to the American Telephone and Telegraph Company. Prior to that time they were sold to the American Telephone and Telegraph Company under the contract of 1882, which was on a cost plus basis, and it was necessary for us, therefore, to make a study each and every year, to see how we were coming out in accordance with the provisions of that contract. At the end of 1926, the prices were set for 1927; at the end of 1927 the change in practice was made, and it was not necessary for us to make any study to set the prices for 1928 on the basis of the cost plus contract of 1882.

I have no recollection as to the exact date when Defendants' Exhibit D-137 was prepared. My statement is that we were interested in the net profits on sales, and this statement was made up at the time, when, as I recall it, I was trying to get some idea of the turn-over, that is, the relation of investment to sales, to which I testified here previously, which was eight-tenths of one time. It was on the basis of these figures that I testified in that way. These figures are only approximate figures, and that is the reason why I testified on the basis of eight-tenths of one time, rather than to attempt to give the exact figure.

I would not say that no study was ever made showing a return on investment to the Western Electric, resulting from the sale of telephone instruments, but all I am trying to emphasize is, that our purpose was to know what the net

profit on sales was, and we were not particularly interested in the net return on investment. We might have made that from time to time, but we were not particularly interested in return on investment.

To the best of my knowledge, and the best of my belief I have not seen a return on investment figure, although I might have in those earlier years, 1916, 1917, (ten or twelve years ago). We may have made them up, and it may be [fol. 7036] those are in the files, but I have never paid any particular attention to them, because they were of no interest to me.

Whether a study of the net profits to investment was made in the regular course of business at the time when we made up the study of net profits on sales, I couldn't answer without going back. My recollection, though, is as I have testified, that we were not interested in it, and I did not pay any particular attention to the return on investment.

Defendants' Exhibit D-137 was prepared under my supervision.

I presume most of these figures could be found in the details in each of the years.

I do not know whether the figures for the investment shown on sheet Defendants' Exhibit D-137, were computed for the first time in connection with the preparation of Defendants' Exhibit D-137, or whether they are taken from studies that were theretofore made. I will have to repeat, as I said before, that I was interested solely in the return on sales, and these figures on investment may have been made in those various years.

The figures shown in the second to last column of Exhibit D-137, "Average Investment," were based on the best estimate we could make of the average amount of plant, merchandise, receivables, cash, less payables, applicable to instruments in each of those years. The average investment as used in that sheet was to the best of my knowledge arrived at in the same manner as we arrived at average investment in connection with Exhibits A-77 and A-79, which we introduced.

The sales of the telephone instruments are included in the sales to Bell customers, as shown in Exhibits A-77 and A-79. In computing the cost of sales, we took those into account also.

Redirect examination.

By Mr. Thompson:

Our sales of telephone instruments, prior to January 1, 1928, were sold to the American Telephone and Telegraph Company and subsequent to that date, to the various Bell associated companies.

---

* * * * * * *

[fol. 7037] W. F. SLOAN, recalled as a witness on behalf of the plaintiff, in rebuttal, having been previously duly sworn, further testified as follows:

Direct examination.

By Mr. Thompson:

June 29, 1932.

* * * * * * *

[fol. 7038] I am familiar with Defendants' Exhibit X-13, which attempts to make a comparison between Gregory's statement "B," appearing in the last column on page 1, and the materials in Account 221, Central Office Equip-
[fol. 7039] ment; Account 231, Station Apparatus; and Account 234, P. B. X., as found in my appraisals for the several years 1923 to 1931. There are not included in these three accounts, or any of them, for the years 1923 to 1927, as shown in my appraisal, any receivers, transmitters or induction coils. The Company did not own them up to that point; they were owned by the American Telephone and Telegraph Company and leased to the Illinois Bell. For the period 1928 to 1931 Mr. Cummings has included all receivers, transmitters and induction coils purchased by the Illinois Bell Telephone Company for its Chicago area after the original purchase which has already been mentioned. I do not know accurately how much these amount to; it is about $2,500,000.

There are not included in these three accounts in my appraisal for the years 1923 to 1931 any loading coils or cable terminals. It is hard to get the exact amount of loading coils and cable terminals added to the Chicago area during this period of time, but from the investigations we have made there is about 1,800,000 loading coils and about 1,500,000 of cable terminals, totaling about 3,300,000.

Class "C" material is material which is turned in to the distributing houses of the Western Electric Company, reconditioned and reissued to the same telephone company. There is quite a lot of Class "C" material included in these three accounts in my appraisal, shown on sheet 1 of this exhibit, but I cannot say how much it amounts to. There is some in the appraisal, quite a substantial amount.

During the period involved in my appraisals, there has been no delay in materials delivered directly to the job after they were purchased from the Western Electric Company. The average turn-over on materials from the warehouse to the job is about three weeks.

In converting the gross additions, I used average prices paid the Western Electric Company throughout the year. My method of dealing with this price situation which Mr. Cummings criticized has not had any substantial effect upon the dollars shown in my appraisal year by year.

[fol. 7040] Since my appraisal exhibits were submitted to the defendants in this case, representatives of the firm of J. G. Wray and Company have inspected the prices which I used and the price lists of the Western Electric Company.

I am familiar with sheet 2 of this exhibit, which purports to show a comparison between my appraisal and what is termed Western Electric Company average, both with respect to manual and dial equipment as to both installation and equipment specification costs. There has been one installation of No. 1 manual switchboards in the Chicago area during the period 1923 to 1931. There have been some fairly large additions of manual switchboards to the existing plant during that period. There has been no installation of the new No. 11 manual switchboards in the Chicago area; they are not used in Chicago. The No. 1 manual switchboard has been standard for approximately twenty years prior to 1923. The new No. 11 manual Western Electric switchboard first came into general use about the latter part of 1923 or 1924.

During the years 1924, 1925, 1926 and 1927, there was a substantial amount of installation labor which had theretofore been done in the field transferred to the factory; there has been a very decided change in their installation methods. The result was that the amount of installation labor on both manual and dial equipment, in proportion to the material, was decreasing rapidly.

In general, I treated the labor and material costs with reference to both manual and dial installations just the way it was installed. That is, my figures were based on performing the installing operations in the field and including them as a labor factor to the same extent with respect to a given central office installation throughout the entire period. Take the case of this State central office, this large dial office over here. That was one of the earlier types of dial equipment, and a large proportion of that labor was installed in the field; that is, after the material had been delivered. Now, in one of the later types, like the Franklin-[fol. 7041] Randolph, the design of equipment had changed, and it was possible to do a lot of that installation work—or work that was formerly done in the field, it could have been done in the factory. Of course, the thing balances back and forth; that is, if you take it out of the field work, then it appears as a cost on the material side.

If an office was installed in 1923, 1924, or 1925, whatever the case might be, I took all material prices as determined for that year from the Western Electric Company and related them to the things which they charged as material at the time that installation was made. Then I arrived at the labor factor for the work of installation. In my later appraisals, I did not increase the price of the material because of a change in policy in the Western Electric Company in transferring work from field to factory. Nothing like that was done at all. It was just carried forward as it was originally erected.

Our answer is correct, because we have carried the material forward as it was and the labor forward as it was. If you take your labor out of the field, you will, of course, have to put something over on the material side. We have done neither one of those. We have just carried that forward as it was, but, of course, the factors that you get taking our study based that way you cannot compare with another set of index factors where that transfer of labor to material has been shown as part of the index.

• • • • • • •

[fol. 7042] R. H. Gregory, recalled as a witness on behalf of the plaintiff, having been previously duly sworn, further testified in rebuttal as follows:

Direct examination.

By Mr. Thompson:

June 29, 1932.

Testimony has been given in this case that there is included in the Western Electric Company's balance sheet, contained in certain of its stockholders' reports under the title "Current liabilities", certain notes payable. In Exhibits A-77 and A-80, both inclusive, in arriving at "Average investment", I have not deducted such payables. In making up a balance sheet, among other things, you have to show current liabilities. Current liabilities include notes on demand, and other payables for a short period of time. [fol. 7043] In as much as there were no notes payable given for merchandise, I have not deducted any notes payable, as the money represented by them is included in the business, and at the risk of the business, and the company is entitled to a return thereon. This method is a proper one to follow in arriving at "Average investment", in my opinion as an accountant.

The Western Electric Company first commenced to borrow money from the Bankers Trust Company, trustee of the pension fund for the Western Electric Company, in 1927. These loans are evidenced by demand notes. The Western Electric Company has continuously from 1927 (when it commenced to borrow this money) to the present time, borrowed all the money in its pension fund from the trustee. None of this money evidenced by these demand notes has ever been repaid to the trustee.

The form of the payables of the American Telephone and Telegraph Company to the Bankers Trust Company, trustee of pension fund, are the same as the form of the payables of the Western Electric Company to the trustee of its pension fund. Such notes of the American Telephone and Telegraph Company are payable to the order of the Bankers Trust Company, trustee, on demand.

I prepared Exhibits A-222 and A-223 which contain a list of information submitted to Touche' Niven and Company for examination at New York and Chicago, subsequent to the list which was introduced in evidence as Exhibit A-73. These exhibits contain a correct statement as to the information furnished and made available to representatives of

Touche' Niven and Company during the period referred to on the exhibits.

I have also prepared a list identified as Exhibit A-253, which shows information furnished to counsel for the City of Chicago, subsequent to the information shown on Exhibit A-73. This exhibit contains a correct statement of the information furnished and records made available for the period referred to in the exhibit.

I have examined Defendants' Exhibit X-294, which consists of a single sheet, and Exhibit X-295, which consists of [fol. 7044] 20 sheets. Shown on these exhibits is certain preferred stock of the Western Electric Company of New York, which was called for redemption in 1920. (All of the items to which I will refer in this connection are shown on the exhibit, A-233.) The Illinois Corporation, the predecessor of the New York Corporation, had a capital stock of 150,000 shares, of $100 par value, aggregating $15,000,000. It had a capital and surplus of approximately $40,000,000. The stock I refer to is common stock; it had one kind of stock only. It was decided to form a New York Corporation, and the New York Corporation was organized, and issued 150,000 shares of 6 per cent preferred stock redeemable at $120 per share, and 150,000 shares of no par common stock. The effect of that transaction was that a man who had one share of stock in the Illinois Corporation received in payment therefore one share of 6 per cent preferred stock in the New York Corporation, and one share of no par value common stock of the New York Corporation.

In 1920 it was decided to redeem this preferred stock, together with an issue of June 30th, 1917, of a similar amount of 6 per cent preferred stock and to issue in exchange therefor common stock. This was done on March 9th. The resolutions of the Board of Directors were made on February 19th. One of them called for the redemption of the preferred stock, and the other called for the issuance of the common stock. The American Telephone and Telegraph Company owned practically all of the preferred stock, and turned in to the company all of its preferred stock in payment for the new issue of common stock. In the whole transaction, there was approximately $350,000 to $360,000 of cash paid to preferred stockholders who did not take common stock. The American Telephone and Telegraph Company received no portion of this $360,000.

On Exhibit X-294 this transaction is treated in part as a

cash dividend received to the extent of $2,936,940. The transaction is also treated as a cash dividend in Exhibit X-295 as follows: on sheet 3, to the extent of $21,000,000; sheet 4 over $16,000,000; sheet 5, $3,000,000; and in the [fol. 7045] summary sheet 12, to the extent affected by the previous sheets.

I am familiar with sheet 1 of Defendants' Exhibit X-13, which shows a trend prepared by Mr. Cummings in connection with Western Electric Company's prices and with the last column on that exhibit entitled "Gregory Statement B". There were included in the figures on which I based my statement as to price reductions by the Western Electric Company and their effect, all loading coils and cable terminals sold during this period of time by the Western Electric Company. I also included all receivers, transmitters and induction coils sold by the Western Electric Company to the American Telephone and Telegraph Company during the years 1923 to 1927, inclusive, as well as all receivers, transmitters and induction coils sold to the Bell Associated Companies from 1928 to 1930, inclusive. No receivers, transmitters or induction coils were sold to Bell Associated Companies prior to 1928. Receivers, transmitters and induction coils were sold to the American Telephone and Telegraph Company subsequent to 1927 only in small amounts to the Long Lines Department. The figures upon which this trend was based do not include any sales of Class "C" material to the Bell associated companies.

Under the column "Approximate effect of price changes —annual basis" on Exhibit A-83 is shown the effect of the price change applied to the total quantities sold during the year, regardless of the date of the price change. The price changes were effective for varying periods from two months to twelve months' periods. Statement "B", which is referred to in Mr. Cummings' Exhibit X-13, is a statement which I prepared and delivered to counsel for the City of Chicago at their request. Statement "B" was prepared on the same basis as Exhibit A-83, and it shows that fact upon its face.

I know of certain index numbers developed by Mr. R. W. Burgess, which have frequently been referred to in this case. R. W. Burgess is Chief Statistician of the Western Electric Company, in the Comptroller's Department. These [fol. 7046] index numbers were developed for the use of

the Chief Statistician, to give information in connection with trends.

There are manufacturing concerns other than the Western Electric Company which use a standard cost system. I have prepared a statement (which was identified as Exhibit A-254) of certain companies which use a standard cost system.

"Q. I call your attention to the following testimony of Mr. McCann, at page 4137 of our transcript:

"Question: You included in Exhibit X-67 all of the profit on the sale to the International Telephone and Telegraph Company, and you allocated all of that profit to the period since the organization in 1918 to 1925, is that correct?

"Answer: Yes.

"Question: And the reason?

"Answer: I allocated it to the period 1918 to 1925 for the reason that the annual reports of the Western Electric Company for the years prior to 1920, show that the foreign business of the Western Electric practically ceased during the war, and that the business was operated in the years immediately preceding 1918 at a loss, and that there were large losses in the investment itself, due to wartime condition.

"When Mr. McCann was asked in his cross-examination to give the annual reports to which he referred in his above testimony, he indicated certain portions of the annual reports of the Western Electric Company for the years 1914, 1917, 1918 and 1919. Have you prepared in exhibit form the extracts from the annual reports for these years to which Mr. McCann referred, which exhibit has been identified as A-255?

"A. I have."

While the foreign business of the Western Electric Company was interfered with to a large extent by the war, there was considerable activity among some of the companies, and in other companies there was no activity at all. [fol. 7047] Our Antwerp factory was taken over by the Germans in 1914. When, however, the facts were known as to the earnings for each of the years, we find that in each of the years a profit was made from 1914 to 1918, inclusive.

There was a situation with respect to the prevailing unfavorable rates of exchange which it was thought at one

time would cause a loss to the Western Electric Company. That did not turn out as unfavorably as we expected.

The facts to which I have just testified, that is, about the International Western and its predecessor, and its subsidiaries having made a profit in each year, was shown in the underlying data which was made available to Touche' Niven and Company. That the underlying data was in connection with the consolidated earnings statement which was delivered to them on February 11th.

The profit on the sale of International Western Electric Company stock owned by the Western Electric Company related to the profits of the Western Electric Company and its foreign companies from 1882 to 1925.

Dr. Arthur Hunter, Chief Actuary of the New York Life Insurance Company, who testified in this case, was employed to make an investigation of what amount should have been accrued by the Western Electric Company under its Plan for Pension Fund purposes on March 28, 1932.

The two statements, identified as D-25 and D-26, were furnished to the defendants in this case on October 28, 1931.

Up to March 28, 1932, the Western Electric Company had never employed or had in its employment any actuary for the purpose of ascertaining the proper amount of accruals for pension fund purposes, although Mr. Burgess used methods employed by actuaries, in making his computations. Until after Dr. Hunter had been employed and had done his work, the officials of the Western Electric Company did not know that their actual accruals for pension fund purposes had been too low for the period 1923 to 1931, inclusive. But without actual knowledge as to the facts, I doubted whether the accruals had been too high. We employed Dr. Hunter on account of the objection given [fol. 7048] by the defendants to my giving any testimony on the actuarial computation for pension fund purposes.

"Q. Attention has been directed to the fact that a reconciliation was furnished to the defendants in this case from which Mr. McCann inferred that no claim had been made by the Western Electric Company that it had the right to deduct as an expense for the years 1924, 1925, 1926 and 1927, in its income tax reports to the government, the item of $2,000,000 set up as an additional depreciation reserve on machinery in 1928.

"What is the fact in this connection?

"A. The field examiners in the latter part of 1930 went over our 1924 and 1925 figures. At that time we made a claim for that part of this $2,000,000——

"Mr. Goldstein: If the Court please, we object to this answer, and the question, on the ground that they had refused to make available the correspondence and the findings in this transaction, and they are now testifying to something that there is no possible way for us to check up on to see whether——

"Mr. Goldstein: It is all hearsay.

"Mr. Thompson: This question was not involved in this case until Mr. McCann testified.

"Mr. Thompson: I would just like to make a brief statement. He testified that the Western had asserted no claim on account of this extra $2,000,000 for depreciation, and he based his testimony upon a reconciliation that had been furnished to him in which he said this amount was considered as a difference between the Western Electric Company's depreciation, as set up in Exhibits A-77 to A-80, both inclusive, and that allowed by the Government.

"Now it was only because of that fact that I have asked Mr. Gregory about this matter. He has here a copy of the text that was filed in this connection with the Federal Income Tax authorities.

"Now, if Mr. Goldstein is willing to admit—or is willing to withdraw Mr. McCann's statement that no claim was made by the Western Electric Company, why, I will pass it. Then I will have no point about it.

[fol. 7049] "Mr. Goldstein: We are not willing to withdraw anything——

"Mr. Thompson: All right.

"Mr. Goldstein (continuing): —that was based upon information that we had, and if you refuse to give us information——

"Judge Wilkerson: How do I know what they refused to give?

"Mr. Goldstein: Well, they refused—he is discussing now the transaction with the field examiners.

"Judge Wilkerson: I do not know anything about it.

"Mr. Goldstein: The record shows that they refused to give Mr. McCann the correspondence with the field examiners, and that is one of the things in this record.

"Mr. Thompson: We refused to turn over to Touche'

Niven all of the files between the Western Electric Company and the Government in connection with matters that were then pending, naturally, of course we did.

"All I am after is the ultimate fact, as to whether——

"Mr. Goldstein: That is one of the——

"Mr. Thompson (continuing): —as to whether the Western Electric Company is making a claim that it is entitled to this allowance for depreciation by the Government.

"Mr. Goldstein: Well now,——

"Mr. Thompson: It is to meet testimony which Mr. McCann was allowed to give, and he stated—he stated as a matter of fact in his direct examination that we had not made any claim for it.

"Mr. Goldstein: And you refused to give us——

"Mr. Thompson: Now, Mr. Goldstein——

"Mr. Goldstein: —the items——

"Mr. Thompson: Just a moment. We——

"Mr. Goldstein: And you are now asking this witness to give this, and there is no way, if we go down to New York, to check to see whether that is the only item, or what there is to it, your Honor. We are opening up an issue, now, which they have refused us the information on.

[fol. 7050] "Judge Wilkerson: Well, I do not know what you are talking about.

"Mr. Goldstein: Well, it appears in the record now that we asked them to give us——

"Judge Wilkerson: No, no, let us confine ourselves to just what——

"Mr. Goldstein: The witness is about——

"Judge Wilkerson: Let us confine ourselves to the question.

"Mr. Goldstein: Yes.

"Judge Wilkerson: I understand the attention of the witness is directed to an affirmative statement by a witness produced by the defendants.

"Mr. Goldstein: Yes.

"Mr. Thompson: That is right.

"Judge Wilkerson (continuing): To the effect that the Western Electric Company made no claim with reference to certain matters. This witness on rebuttal is asked whether it did or not. The objection is overruled.

"Mr. Goldstein: No, that is not the question, as we understand it.

"Judge Wilkerson: It is to meet the testimony of your witness, to rebut the testimony of your witness. Now, if you were permitted to ask one witness a question, why should they not in rebuttal be permitted to ask another witness?

"Mr. Goldstein: That is not the question. The question is——

"Mr. Thompson: All right. I will make it that way.

"Mr. Goldstein: The question is, did he file a paper with the Government?

"Mr. Thompson: No.

"Judge Wilkerson: The objection is overruled. You may save your point.

"Mr. Thompson: I will ask you the question, Mr. Gregory; did the Western Electric Company make a claim for this?

"A. It did.

"Mr. Adcock: We object to that.

[fol. 7051] "Mr. Thompson: There was identified during——

"Mr. Adcock: If it is in writing——

"Mr. Goldstein: If there is something in writing we want to see it, and they have refused us——

"Judge Wilkerson: Do you withdraw the testimony of McCann?

"Mr. Goldstein: No.

"Judge Wilkerson: The objection will be overruled."

There was identified during Mr. McCann's testimony, and there has been introduced in evidence, Exhibit X-94 which shows certain surplus adjustments of the 88 companies, about which information is collected in Exhibits A-85, A-86 and A-87. I have determined what the effect would be upon the return as shown in Exhibit A-85, if all of these adjustments were made. The total effect would be .3 per cent, reducing the return from 12.2 per cent to 11.9 per cent. When I say "return," that is the return of the 88 companies, shown on Exhibit A-85.

I collected and put in binder form the underlying data showing the profits on the Bell and non-Bell business of the Western Electric Company for the year 1931 to which I testified in this cause. This underlying data was submitted to Touche' Niven and Company for inspection at the request of Mr. McCann. This inspection was actually

made by Mr. McCann and his assistants in the latter part of April, and the early part of May, 1932.

I have examined Defendants' Exhibits X-84, 85, 87 and 88, which are entitled "Western Electric Company, Incorporated, and Subsidiaries. Consolidated Average Investment, Profits, and Percentage of Returns." In arriving at the figures contained in these exhibits Mr. McCann has deducted from investment the sum of almost $12,000,000 for the year 1930 on account of an item of "good will" appearing in the balance sheet of the Teletype Corporation. When the Western Electric Company purchased Teletype, it paid actual cash for this good will equal to the amount of good will set up on the books of the Teletype [fol. 7052] Corporation. In my opinion, the deduction of this good will in computing average investment in these exhibits, is not a proper one.

In Exhibits X-51, 52, 84 and 85, Mr. McCann has reduced average investment by excluding notes payable, but has not decreased the earnings by a reduction of the interest applicable to the notes taken out of investment. The reduction made on account of Notes Payable in Exhibits X-51 and 52, for the period of 1916 to 1930, is $278,000,000. That is the cumulative effect. For the period 1923 to 1930, the cumulative effect is about $165,000,000. The amount of interest paid on these obligations during the same period of time was: for 1916 to 1930, $15,753,000; and for 1923 to 1930, $8,626,000. The same data for Exhibits X-84 and X-85 is as follows: for the period 1916 to 1930, the cumulative effect was $275,000,000, and for the period 1923 to 1930, $146,000,000. The interest is the same as I have given for X-51 and X-52.

I think the method followed by Mr. McCann in Exhibits X-51, X-52, X-84 and X-85 is clearly wrong, but since he has deducted the amount of the notes payable, he should have deducted the amount of interest on such payables from earnings before computing his percentage.

In Exhibits X-51 and X-52, Mr. McCann also excluded certain amounts which he claimed were excess cash in the following amounts: for the year 1916, $2,558,000; 1917, $2,299,000; 1920, $901,000; 1921, $3,343,000; 1922, $3,660,000; 1924, $1,644,000; 1925, $20,561,000; or a total of $34,966,000. After he had taken out this excess cash, he decreased the profit on some of the exhibits by $874,000 by excluding the interest earned on this claimed excess cash.

But in Exhibits X-51 and X-52 he did not decrease the profits at all. The failure of Mr. McCann to exclude the interest on such claimed excess cash in these Exhibits X-51 and X-52, also results in his overstating the per cent return on average investment.

In the exhibits where he did exclude the earnings he allowed the Western Electric an average of 2.5 per cent on such claimed excess cash. The Western Electric Company actually earned approximately 5 per cent on its cash and [fol. 7053] cash items in 1925. The result of Mr. McCann's applying an average per cent to claimed excess cash when almost two-thirds of the claimed excess cash excluded by him is applicable to a year in which the Western Electric Company actually did earn 5 per cent on its cash and cash items is that he has overstated the profits in 1925 by a little over $500,000. This error is reflected in Exhibits X-54, X-55, X-57, X-58, X-60, X-61, X-63 and X-64.

Comptroller's Report 7.14, referred to by Mr. McCann contains the following phrases: "Normal Working Cash Balance"; "Normal Cash Balance." These phrases represent a bogey, which the Western Electric set, and at which they hope to keep their cash balances. They do not at all represent the amount of cash that was actually in the business. Mr. McCann had deducted the amount of cash that we actually had when it exceeded the bogey. But when it is under the bogey, he has not given any counterbalancing effect. In 1918, 1919 and 1923, our cash requirements were below the bogey and he made no adjustment of any kind at all in connection with that. He did not give us the benefit.

I think the amount of cash working capital included in Exhibits A-77 to A-80 is extremely low. I know of no manufacturing company that is able to get along with as small a cash balance as the Western Electric Company. As compared with the 88 companies, the cash balance for the Western Electric Company for the period 1925 to 1930 is approximately one-third of the average of the 88 companies.

I am familiar with Exhibit X-97 compiled by Mr. McCann. Mr. McCann attempts to compare concerns which have an entirely different turn-over (and when I refer to "turn-over" I have in mind the relation of sales to plant). For instance, he compares the International Cement Company, which has a turn-over of .4 times, with the Chrysler

Company, which has a turn-over of 1.6 times. In making up my exhibits, Exhibits A-77 to A-80, inclusive, the turn-over on sales to Bell and non-Bell customers is practically the same. Therefore, any comparison of this sort has no [fol. 7054] significance to the apportionment that is made by the Western Electric Company.

The defendants have followed a different method for the period prior to 1925 and for 1925 and subsequent years in apportioning pension fund accruals between Bell and non-Bell business. Subsequent to 1925 they have based their apportionment on the basis of the payrolls, which is the Western Electric Company's method. Prior to that time they based their apportionment on basis of the cost of sales, including supplies which were sold in large quantities to non-Bell customers. This method has resulted in overstating profits on the Bell business by approximately $1,500,000. This overstatement of earnings is reflected in Exhibits X-50 and X-53 to X-58, inclusive.

I am familiar with Exhibit X-35, prepared by Mr. Hagberg. In my opinion, if the shop variations to basic gross profits and other adjustments had been apportioned on the basis of the plus and minus adjustments instead of net, there would have been no difference in the result. You have to use some yardstick, some measure of apportionment, and if you use the net or the gross in my opinion it would make absolutely no difference, for the reasons that I have already given in my testimony.

I am familiar with the method which was used by the Western Electric Company in financing Electrical Research Products, Inc. It was in large part by loans from the Western Electric Company. I have prepared an exhibit which shows the average loans from Western Electric Company to Electrical Research Products for each of the years 1927 to 1930, inclusive.

(Which document was identified as Plaintiff's Exhibit A-256.)

In the year 1929 (in which Mr. McCann shows a return of 309.4 per cent for the Electrical Research Products, Inc., on the upper half of his Exhibit X-79) 74 per cent of the total capital employed in the business of Electrical Research Products, Inc., was represented by loans made to [fol. 7055] it by the Western Electric Company. The facts in connection with these loans which are stated on this ex-

hibit, were furnished to Touche' Niven and Company, on January 19, 1932.

I am familiar with the sale by the Western Electric Company of its common stock in the Graybar Electric Company to the Management Corporation of Graybar Electric Company. The Graybar Electric Company was organized in the latter part of 1925, to take over that part of the Supply Department's business of the Western Electric Company which related to the United States, within the territory of the United States. This business consisted of the distribution of telephone apparatus and cable manufactured by the Western Electric Company, and sold to non-Bell customers, and the purchase of supplies manufactured by others and sold to non-Bell customers. The company was organized, and was maintained as a 100 per cent owned subsidiary of the Western Electric Company for the first three years, that is, 1926, 1927 and 1928.

In disposing of this company, the Western was activated by the desire to maintain its capital entirely for the use of the Bell business, in so far as that was practical. It was also desired to avoid any criticism of being in competition with customers of the Bell System Companies. Competitors of the Graybar Electric Company are large users of telephone service. It was also desired to sell to the employees of the Graybar Electric Company, many of whom were of long standing with the Western Electric Company. The sale was made, and at a price of $9,000,000, which was approximately the book value. Payment was made therefore by $3,000,000 in cash, and $6,000,000 in participating preferred stock. To effect the transfer, the Graybar Management Corporation was formed, which took over all of the voting common stock of the Graybar Electric Company. No employee of the Western Electric Company, or any of its subsidiaries, nor any company in the Bell System owned a single share of stock in the Graybar Electric Company after December 31, 1928; not a share of common voting stock, but we had the participating preferred stock.

[fol. 7056] The participating preferred stock shared in the earnings after deduction for all taxes except Federal taxes, for pension fund accruals, for the 7 per cent dividend on the preferred stock, and the sum of $450,000, which is equivalent to 15 per cent on the $3,000,000 of voting common stock held by the Graybar Management Corporation. The extent of the participation is one per cent for each

thousand shares of preferred stock outstanding, and from the amount thus determined is deducted the Federal tax on the 7 per cent preferred dividends, and also on this additional dividend, and the balance was paid over to the Western Electric Company, or whatever subsidiary owned the company at that time.

The Western Electric Company or its subsidiary had an option to re-purchase the stock on giving 90 day's notice, but within that time the Graybar Management Corporation could redeem the preferred stock, or purchase that stock, and if it were redeemed or purchased the Western Electric Company would have to give up its preferred stock. Thus Graybar Management Corporation was in a position to prevent the Western Electric Company from exercising that option.

The preferred stock has been reduced since the date that it was first issued. It now stands at four million dollars as compared with six million dollars, which was the amount outstanding at the time of the sale. The employees had the right to require the Western Electric Company to take back the property on or before December 31, 1933, on payment of the purchase price, with interest at 6 per cent after making due allowance for any dividends which have been received by them in the meantime. The sale was a bona fide sale, under an agreement which made the necessary provisions to protect the seller's right if full cash payment was not made for the property. In other words, only $3,000,000 of cash was obtained, and $6,000,000 was outstanding, to be paid for at a later date.

"Mr. Goldstein: I move to strike out the answer on the ground—that part of the answer which says that 'The agreement contained the necessary provisions to protect' [fol. 7057] —or whatever it was, because the terms of the agreement will speak for themselves; it is contained in the instrument, and it is in the record.

"Mr. Thompson: I shall not object, your Honor, to that portion of the answer going out in which Mr. Gregory has stated the terms of the writing between the Graybar Management Corporation, and the Western, and the Graybar Electric.

"Mr. Goldstein: Then I also object to that portion of the answer in which the witness has said it was a bona fide transaction, because that is a matter of law, and the con-

clusion of the witness, which he is not justified in making.

"Mr. Thompson: I think it should stay in if your Honor please. It has been openly charged in court by counsel that this was a sham transaction.

"Mr. Goldstein: The instrument speaks for itself. He is drawing a legal conclusion from the document.

"Judge Wilkerson: Are all of the documents introduced?

"Mr. Goldstein: Yes.

"Mr. Adcock: Yes.

"Mr. Goldstein: They are all in the record.

"Mr. Thompson: But they have tried to create the impression here—Mr. Goldstein has—that there was something unusual—

"Mr. Goldstein: There is.

"Mr. Thompson (continuing): —or unfair or improper about this transaction.

"Judge Wilkerson: You say, there is?

"Mr. Goldstein: Yes.

"Judge Wilkerson: He may answer the question. Complete your answer.

"The Witness: The question is, whether it is bona fide——

"Mr. Thompson: The answer is in the record. We have the answer.

"Mr. Goldstein: It is a legal conclusion from the documents, and not the witness' testimony. I am not the witness. He is drawing legal conclusions from the documents themselves, and they are in the record. Now, if there are any [fol. 7058] other facts that this witness has other than those that are in the record, we should have them, because we have attempted for four months to get all of the facts, and we did not get them until toward the end.

"Now, we want to get all of the facts we can, but we object very strenuously to this witness expressing an opinion as to the legal conclusion of these documents.

"Judge Wilkerson: Well, so far as he has expressed any legal opinion, it may go out.

"Mr. Goldstein: He says it was a bona fide transaction.

"Judge Wilkerson: Any legal opinion—he used the words 'bona fide'.

"Mr. Goldstein: Yes.

"Judge Wilkerson: What do you mean by that?

"The Witness: I mean it was a sale made in good faith, with full intent——

"Judge Wilkerson: Well, leave out the 'good faith'.

"The Witness: I mean it was a sale—everybody connected with the sale knew that the Western Electric Company wanted to dispose of that property; we did not want to have that property—carry on that business any longer; we wanted to go out of that business, and the method of selling it to our employees was a way of taking care of our employees, who had been in long term service, and at the same time dispose of the business.

"Judge Wilkerson: Is there anything about this transaction which does not appear in the documents here?

"The Witness: Not that I know of.

"Judge Wilkerson: All right.

"Mr. Thompson: The Graybar Electric Company——

"Judge Wilkerson: He says that there is nothing about it that does not appear in the documents themselves.

"Mr. Goldstein: All right.

"Judge Wilkerson: Now, if it is an unfair transaction, or in bad faith, a bad faith transaction, on the face of the documents, it is. He says there is no secret agreement—— [fol. 7059] "The Witness: No, sir.

"Judge Wilkerson: —or any understanding, so far as he knows.

"The Witness: Nothing.

"Judge Wilkerson: (Continuing) Nothing about it except what appears on the face of the documents.

"The Witness: That is correct.

"Mr. Adcock: Then his answer should be stricken out.

"Mr. Thompson: No.

"Mr. Adcock: That it was a bona fide transaction.

"Mr. Goldstein: What is his answer——

"Judge Wilkerson: He used the words 'bona fide' in the sense in which a layman generally uses the term.

"Mr. Thompson: Yes.

"Judge Wilkerson: And that there is not anything about it except what appears in the papers themselves.

"Mr. Goldstein: With that understanding, his answer may stand.

"Judge Wilkerson: All right. That is the understanding.

"Mr. Goldstein: That is the understanding.

"Judge Wilkerson: Yes.

"Mr. Goldstein: All right.

"Judge Wilkerson: That is what he meant by it.

"Mr. Thompson: In setting the candles around, I do not want any misapprehension. I want the facts, about the

fact that these men were employees of Graybar, and that this business was a non-Bell business. I do not want those to go out.

"Mr. Goldstein: The record shows that very clearly and completely.

"Judge Wilkerson: And he said that it was openly discussed there among all of the parties that the company wanted to sell this business.

"Mr. Goldstein: All right.

"Judge Wilkerson: And that the employees wanted to take it over.

"The Witness: That is right.

"Mr. Goldstein: All right.

[fol. 7060] "Judge Wilkerson: Go on.

"Mr. Thompson: Has the Graybar——

"Judge Wilkerson: That was a matter that was discussed openly?

"The Witness: Negotiations were carried on for nine months to a year.

"Judge Wilkerson: All right."

The Graybar Electric Company has never done any business with the Bell associate companies.

When requests were received from Touche' Niven and Company, or from any other sources, which required the Western Electric Company to furnish information in a form in which it did not exist, and where it did not exist, and where it was necessary to prepare one or more statements, we started immediately in the preparation of these statements and delivered them to Touche' Niven and Company, or to the representatives of the defendants as soon as they were completed. I furnished to Touche' Niven and Company for their inspection the underlying data for Exhibits A-93 to A-98, both inclusive.

With respect to item 2, on Exhibit X-312, the data underlying the consolidated earnings statement of the Western Electric Company and its subsidiaries, the facts about the submission of this underlying data are that the preliminary statement was sent to Mr. Goldstein on December 19, 1931, and he was informed at that time that that was a preliminary statement which gave information from 1916 to 1931 inclusive, 1931 on the 8 months basis raised to a 12 months basis, and also he was informed that it was necessary to make certain checks, and that we were going to have the

statement audited. After those checks had been completed, and the audit completed, the revised statement was sent to Mr. Goldstein on February 11th, and the underlying data delivered to Mr. McCann of Touche' Niven and Company on the same date.

I am familiar with Exhibit D-61 which was delivered by me to Mr. Goldstein while I was on the witness stand. I received from Touche' Niven and Company, while I was in [fol. 7061] New York, a letter dated April 21st, making a request in connection with this matter. This letter is addressed to the Western Electric Company, 195 Broadway, Attention of R. H. Gregory, Comptroller, and reads as follows:

"Will you kindly make available for our examination the working papers showing the details by years underlying Defendants' Exhibit D-61, entitled 'Analysis of Profits on business other than with Bell Telephone Companies from 1881 to 1927 inclusive'.

"Very truly yours, Touche' Niven and Company, by G. B. McCann."

In response to that request I delivered to Touche' Niven and Company, an instrument which has been identified as Plaintiff's Exhibit A-228, showing the details by years. On the day of the receipt of this letter, counsel in charge left for Indianapolis, where he was for several days. It was necessary for me to get in touch with him at Chicago, after he had returned to Chicago. About 85 per cent of the amount involved in this D-61 statement had been available for the examination of Touche' Niven and Company, in the underlying data, which they had since February 11th. Later, on a request from Touche' Niven and Company, one of their employees was permitted to copy the underlying data in connection with this matter. Touche' Niven and Company had an apportunity to inspect all of the records in connection with this statement, of the Western Electric Company, and its subsidiaries back to 1916.

I was asked a number of questions about having included in average investment in Exhibits A-77 to A-80, both inclusive, for 1926 and subsequent years, certain so-called working reserves. Under the caption "Working Reserves" are included reserve for moving expenses, federal tax ac-

cruals, accruals for pension fund purposes, and for others of similar character. While they are proper charges to cost of sales, they are not expended until some later date; in some cases for considerable length of time. They are therefore moneys invested in the business, and at the risk of [fol. 7062] the business, on which we are entitled to make a return.

The actual purchases of the associate companies are not always the same as the amounts contained in their provisional estimates as the estimated amounts of various classes of telephone apparatus which they think at the time they will purchase. These provisional estimates are received by Western either in November or December of the year, for the succeeding year. They are based on facts which are compiled in some cases as far back as July 1 of the preceding period. They in no way represent sales. Many changes must be made in these provisional estimates prior to the end of that year, and during the year for which it is compiled. The sales for the year differ from the provisional estimates not only in the aggregate, but in subclassifications.

The instrument identified as Exhibit A-257 was prepared under my supervision. This shows the earnings of the Western Electric Company on the Bell business expressed in percentages of sales, and in percentage of (a) average investment, and (b) average investment less amount of depreciation reserve account, 1916 to 1932, inclusive, and 1923 to 1932, inclusive, with adjustments for certain items as listed on page 2 of the exhibit. The purpose of this exhibit is to show the per cent earnings on sales and on average investment, both before and after deducting the depreciation reserve account and after taking into consideration adjustments with respect to certain controverted points upon which I have heretofore testified. This exhibit is self-explanatory. I have testified in detail about each one of the items that appears on this exhibit.

I have prepared two exhibits (identified as Plaintiff's Exhibits A-258 and A-259) which show the relation of gross additions to depreciation reserve to the cost of small tools and furniture and fixtures, during the period 1916 to 1932. Under the heading "Gross Additions to depreciation reserve" are shown the amounts which have been charged into cost of sales obtained by maintaining a reserve of 100 per cent depreciation. The second column shows the cost at

[fol. 7063] December 31st of each year, and the average for the periods shown. The last column shows the relation of the third column to the second column, and it shows that during this period of time taking the two accounts together, the amount charged off represents rates on the average varying from 14.1 to 15.7 per cent of the cost value of the plant.

I know about the contract between the Western Electric Company, the General Electric Company, and the Phonic Laboratories. The Western Electric Company never received any royalties under that contract. The contract was made in 1921. In 1922 the Phonic Laboratories found that they could not finance the proposition, and the company practically went out of business, and was dissolved in 1927.

(Plaintiff offered in evidence all exhibits identified during the course of this witness' examination. Cross-examination deferred.)

F. M. WILLIAMS, called as a witness in rebuttal on behalf of the plaintiff, having been first duly sworn, testified as follows:

Direct examination.

By Mr. Thompson:

June 29, 1932.

My name is F. M. Williams. I reside at Summit, New Jersey. I am at present employed by the Western Electric Company as General Installation Engineer. I have occupied that position about five years. Before that time, I was employed by the Western Electric Company about 18 years. The first year I was on the student apprentice force; for about two years following that I was engaged in preparing central office equipment specifications; for about six years following that I was engaged in standardization work, associated with the equipment engineering; and from that time until April, 1927, or about nine years, I was engaged in various supervisory capacities in equipment engineering work.

The last five years of that time I was in charge of all of [fol. 7064] the central office equipment engineering for the Western Electric Company.

I have been familiar for the period commencing January 1, 1923, and continuing up to the present time, with the